SEG VCR-5200

MODEL

SERVICE MANUAL

••••••• SPECIFICATION •••••

GENERAL

Power requirement	: AC 110-240V~, 50/60Hz (For M.East)
	: AC 230V~, 50Hz (For Others)
Power consumption	: Max. 19W (in REC mode)
Temperature	: 5˚C~35˚C (Operating)
	-20˚C~60˚C
Operating position	: Horizontal only
Dimensions (WxHxD)	: 360x90x288 (mm)
Weight	: Approx. 4.0Kg
Format	: VHS standard
Tape width	: 12.65mm
Tape speed	: (SP) : 23.39mm/sec
	(LP) : 11.70 mm/sec
Maximum recording time with full-size cassette	: (SP) : 240min. with E-240 video cassette
	(LP) : 480min. with E-240 video cassette

VIDEO

Signal system	: PAL colour and CCIR monochrome signals, 625 lines/50 fields
Recording system	: Rotary two-head helical scan with a slant double-azimuth combination video head
Input	: 1.0Vp-p, 75ohms, unbalanced
Output	: 1.0Vp-p, 75ohms, unbalanced
Signal-to noise ratio	: 45dB(Rohde & Schwarz noise meter) with NETTETE IMAGE control at center position
Horizontal resolution	: 240 lines with NETTETE IMAGE control at center position

AUDIO

Recording system	: Longitudinal track
Input	: -8 dBm, (CENELEC standard), more than 47 k-ohms, unbalanced
Output	: -6dBm, (CENELEC standard), less than 1 k-ohm, unbalanced (100 k-ohms, load)
Frequency range	: 100 Hz to 8 KHz (Normal)
	: 20 Hz to 20 KHz (Hi-Fi)
Signal to noise ratio	: 38 dB More than (Normal)
	: 60 dB More than (Hi-Fi)
Audio Distortion	: Less than 3% SP (Normal)
	: Less than 0.5% (Hi-Fi)

TUNER

Tuning system	: Voltage synthesized tuner Programmable V/S 99CH (Hyper band)
RF Output	: UHF channel 22~69 52ch : For U.K & S/Ireland 60ch : For Others

TIMER

Memory programmable	: 99 CH
Back up time	: Less than 1 Hour
Clock exactness	: In accordance with the exactness of power supply frequency (50Hz)

ACCESSORIES

Provided Accessories	: Remote control unit, RF Cable, Battery

* Design and specification can be subjected to change without notice.

CHANNEL COVERAGE

SYSTEM	PAL, SECAM-B/G PAL-I/I PAL, SECAM-B/G, D/K HYPER BAND	PAL-I	PAL-B/H
CHANNEL	VHF Ch 2~12 UHF Ch 21~69 CATV Ch X,Y,Z SI~S41	UHF Ch 21~69	VHF LOW Ch 1A~5 VHF High Ch 5A~N11 UHF Ch 21~69

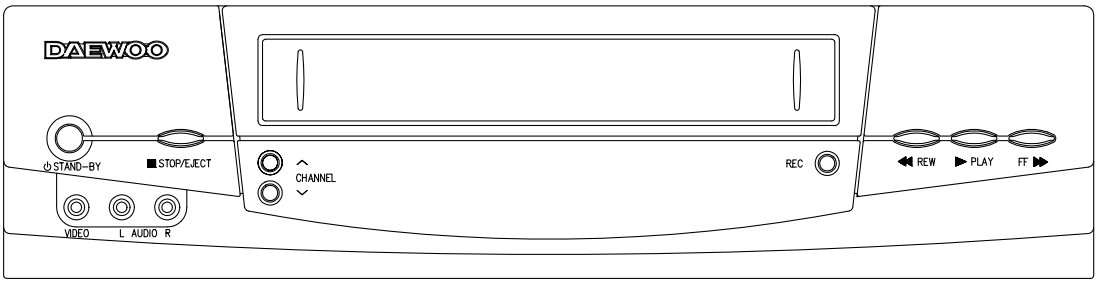
IN/OUTPUT JACK TYPE

MODEL	EUROPE	Asia South Africa Australia
JACK TYPE	SCART Type	RCA JACK (PHONE JACK)

RECORDER VIDEO CASSETTE RECORDER VIDEO CASSETTE RECORDER VIDEO CASSETTE

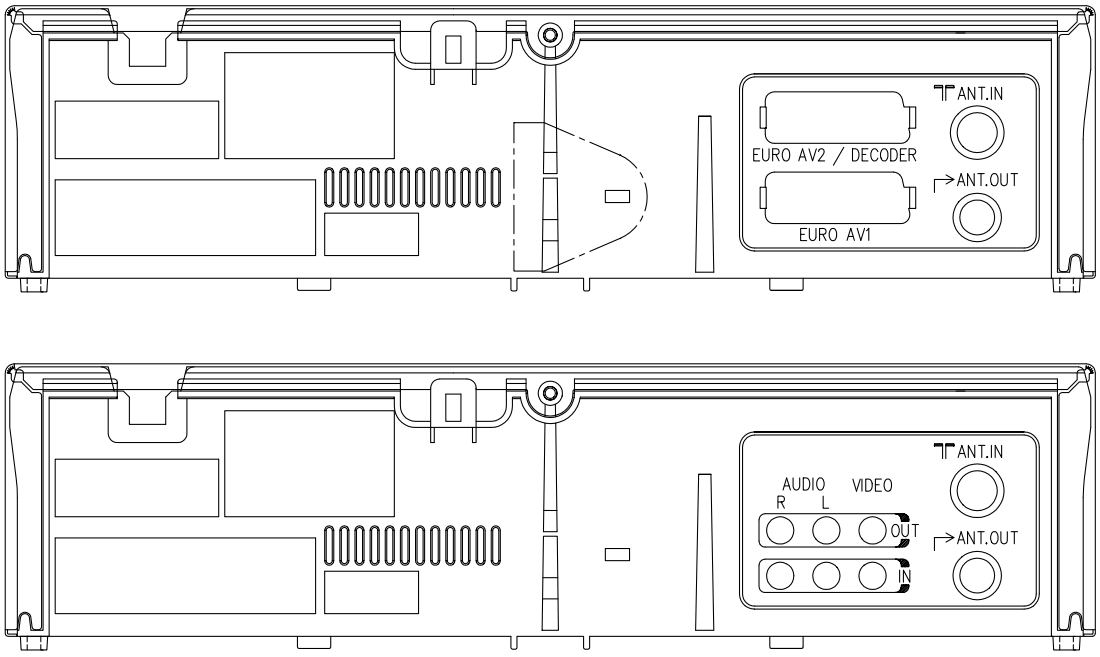
SECTION 1. CONTROLS AND FUNCTIONS

Front



1. STAND BY
2. STOP/EJECT
3. CHANNEL UP / DOWN SELECTION
4. PLAY BACK
5. REWIND / REVIEW
6. FAST FORWARD / CUE
7. RECORD / OTR (ONE TOUCH RECORDING)

Rear



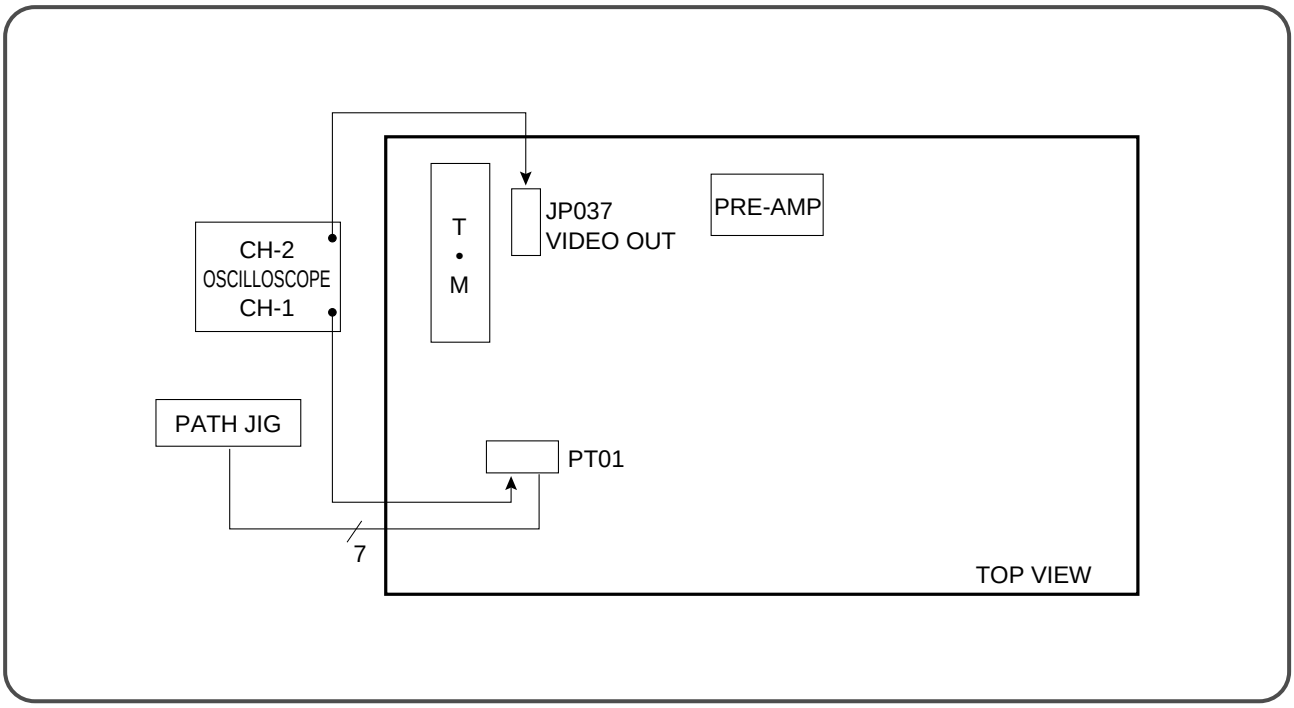
1. EURO AV2 / DECODER (AV OUT)
2. EURO AV1 (AV IN)
3. ANTENNA INPUT TERMINAL
4. ANTENNA OUTPUT TERMINAL

2-1. Servo Circuit Adjustment Method

1. PLAYBACK PHASE

ADJUSTMENT PARTS	CHECKING POINT	MEASURING EQUIPMENT	MODE	TEST TAPE
Check	JP037 V.OUT PT01 PIN ④	Oscilloscope	Play	DP-2

• CONNECTION METHOD



• ADJUSTMENT PROCEDURE

1) Play back the test tape. (DP-2)
2) Set the oscilloscope to the CHOP mode. Connect CH1 to the SW PULSE (PIN ③ of PT01).
3) Insert PATH JIG and Press “REC” button on the remote control.
4) Check the position of the V-sync from the rising edge of the SW pulse.
   (Standard : 6.5H±0.5H)

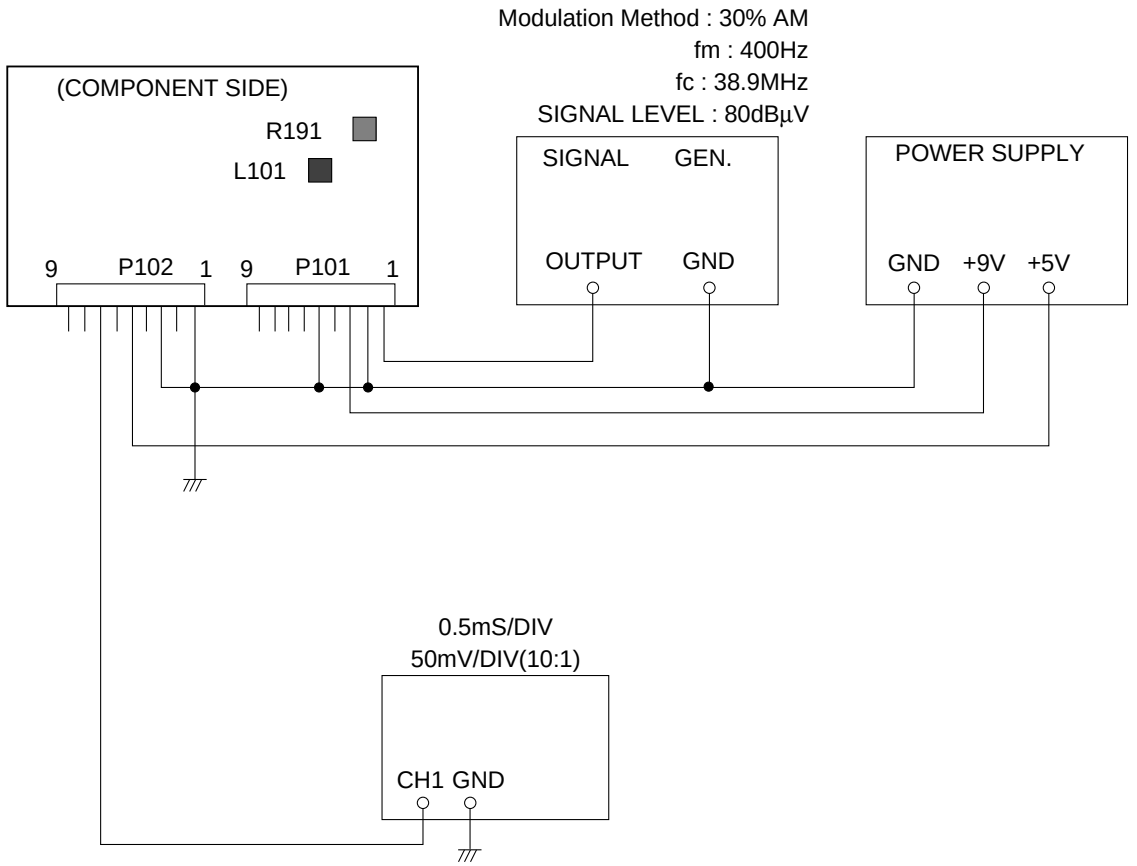
2-2. IF Module Circuit Adjustment Methods

1. AFT

ADJUSTMENT PARTS	CHECKING POINT	TEST EQUIPMENTS	INPUT SIGNAL
L101	P102 PIN ⑦	Signal Gen. Oscilloscope Power Supply	Refer to the following.

• AFT CONNECTION METHOD

IF MODULE PCB (TOP VIEW)



• ADJUSTMENT PROCEDURE

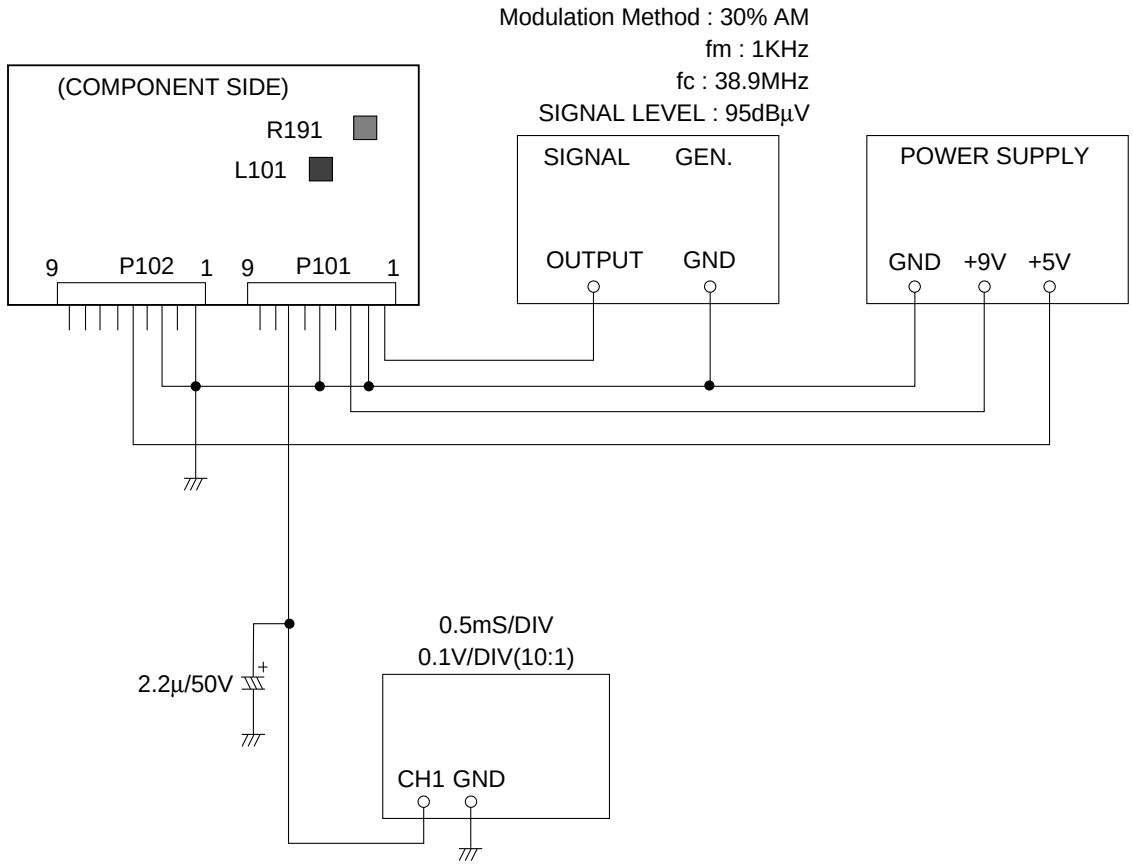
1) Connect the circuit as above connection diagram.
2) Set the each equipment setting as above description.
3) Adjust L101 to obtain 2.5±0.15V DC Voltage at check point.

2. RF AGC

ADJUSTMENT PARTS	CHECKING POINT	TEST EQUIPMENTS	INPUT SIGNAL
R191	P101 PIN ⑦	Signal Gen. Oscilloscope Power Supply	Refer to the following.

• RF AGC CONNECTION METHOD

IF MODULE PCB (TOP VIEW)



• ADJUSTMENT PROCEDURE

1) Connect the circuit as above connection diagram.
2) Set the each equipment setting as above description.
3) Adjust R191 to obtain 6.0±0.2V DC Voltage at check point.

SECTION 3. CIRCUIT OPERATION PRINCIPLES

3-1. Power Circuit

1. OUTLINE

The part that supply DC VOLTAGE to each circuit change AC input voltage into DC voltage. It is based on SMPS(switching mode power supply)system which is located on main PCB. SMPS module is composed of the switching circuit and the transformer of the primary part and the rectifier circuit of the secondary part.

2. NAME AND OPERATION OF PINS ON SMPS MODULE

1) Primary Part

PIN NO	NAME	FUNCTION
1	AC INPUT	SUPPLY AC INPUT VOLTAGE
2		

2) Secondary Part

PIN NO	NAME	FUNCTION
1	+38V	TURN VOLTAGE OF TUNER (33V)
2	(F+4.5V)	F/L DISPLAY FILAMENT VOLTAGE SUPPLY
3	(F-GND)	F/L DISPLAY FILAMENT VOLTAGE SUPPLY
4	-23V	F/L DISPLAY DRIVE VOLTAGE SUPPLY
5	GND	SECONDARY GND
6	GND	SECONDARY GND
7	GND	SECONDARY GND
8	6V	EVER 5V, ON/OFF 5V
9	12.4V	CAP MOT, DRUM MOT (12V) LOADING MOT (12V)

3. GENERAL CIRCUIT OPERATION

The circuit shown is a highly accurate 38V, 12.5V, 6.0V, -24V, 4.5V, 20W secondary regulated flyback power supply that will operate from 85V to 265 VAC input voltage.

The input voltage is rectified and filtered by D801 and C1. L801, C801, C804 reduce conducted emissin current. C806, L801, C805 reduce common mode noises. R801 is ESD path resistor.

Voltage feedback is obtained from the transformer (T11) bias winding, which eliminates the need for optocoupler and secondary-referenced error amplifier. High-Voltage DC is applied to the primary-high-voltage DC is applied to the primary-winding of T11.

The other side of the transformer primary is driven by the integrated high-voltage MOS FET-transistor within the TOP214 (IC11). The circuit operates at a switching frequency of 100KHz, set by the internal oscillator of the TOP (IC11). The clamp circuit impelemented by DZ11, D11, C17 and R13 limits the leading-edge voltage spike caused by transformer leakage inductance to a safe value.

The 38V power secondary winding is rectified by DC1, C25. The 12.5V power secondary winding is rectified and filtered by D24, C24. The 6.0V power secondary winding is rectified and filtered by D23, L22, C23. The -24V power secondary winding is rectified and filtered by DC2 and C22. The F(+) and F(-) power secondary winding is rectified and filterd by DC3, C21 and C29.

A IC21(KA431) shunt regulator directly senses and accurately regulates the output voltage. The effective output voltage can be file turned by adjusting the resistor divider formed by R24, R25 and R26. Other output voltages are possible by adjusting the transformer turns ratio as well as the divider ratio.

The IC21(KA431) regulates the output voltage by controlling optocoupling LED current (and IC11 duty cycle) to maintain an average voltage of 2.5V at the IC21 input pin.

Divider R24, R25 and R26 determine the actual output voltage. C27, R27 rolls off the high frequency gain of the KA31 for stable operation.

R23 limits optocoupler LED current and determines high-frequency loop gain. SPFT start capacitor C26 increases optocoupler current turn-on to limit the duty cycle and down the risting output voltage. C26 has minimal effect on the control loop during normal operation. R22 dicharges soft start capacitor C26 when input power is removed.

The output of the T11 bias winding is rectified and filtered by D12, C11 and R11 to create a typical 12V bias voltage R12, R13 together with the control pin dynamic impedance and capacitor ESR establish a control loop pole-zero pair. C13, R12 also determines the auto frequency and filters internal gate drive switching current.

3-2. Key Features of Video IC and Its Relatives

1. LA71511M(QOP 80 PIN) : LUMINANCE-CHROMINANCE AND NORMAL AUDIO SIGNAL PROCESSING IC

1) Applicable to multi system : PAL-GBI, MESECAM, 4.43NTSC, NAP-GBI
2) Built-in NAP circuit to convert NTSC to PAL
3) Normal audio signal processing circuit (self-alignment for record bias)
4) Built-in record and playback FM-EQ function (I^2C bus control)
5) Y/C separation using built-in comb filter
6) Built-in switching circuit for 3 video/audio inputs
7) Serial control by I^2C-bus
8) Complete adjustment free
9) Crosstalk reduction by CCD IC for exclusive use (Color comb filter is unnecessary)

2. LA70011(4CH) : PRE-AMP IC

1) AGC circuit is built-in this IC (no record current adjustment is required)
2) Playback envelope detector circuit is built-in this IC for the purpose of auto-tracking

3. LC89977M : CCD DELAY LINE IC

1) Built-in comb filter function for color noise reduction
2) Built-in 1H delay line for luminance signal

3-3. Record and Playback Processing Circuit

1. RECORD PROCESSING

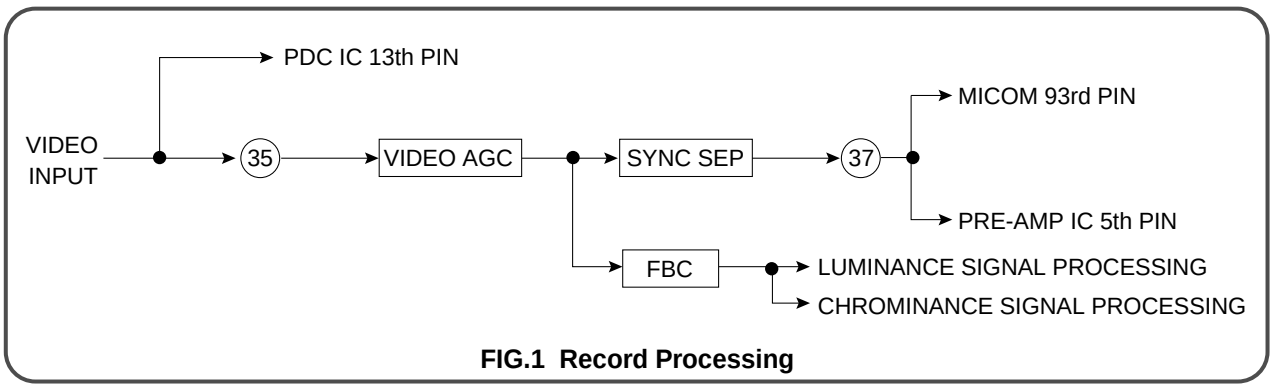


FIG.1 Record Processing

The video input signal selected by the A/V switching IC(KA8119B) among AUX video input, Front video input and IF video input, is supplied to the 35th pin of A/V 1CHIP IC.
The input video signal is then automatically adjusted to suitable level by the built-in AGC circuit and supplied to SYNC SEPARATION and FBC(feedback clamp) part respectively.
SYNC signal obtained from the composite video signal by SYN SEP circuit is supplied to the 93rd pin MICOM to determine the presence of signal and to control the SERVO LOGIC.
In PRE-AMP IC, fir HEAD AMP switching timing on TRICK PLAY and AGC circuit for self-aligning the record bias.
The signal through FBC is then processed in luminance signal processing part and chrominance signal processing part independently.

1) LUMINANCE SIGNAL PROCESSING (RECORD)

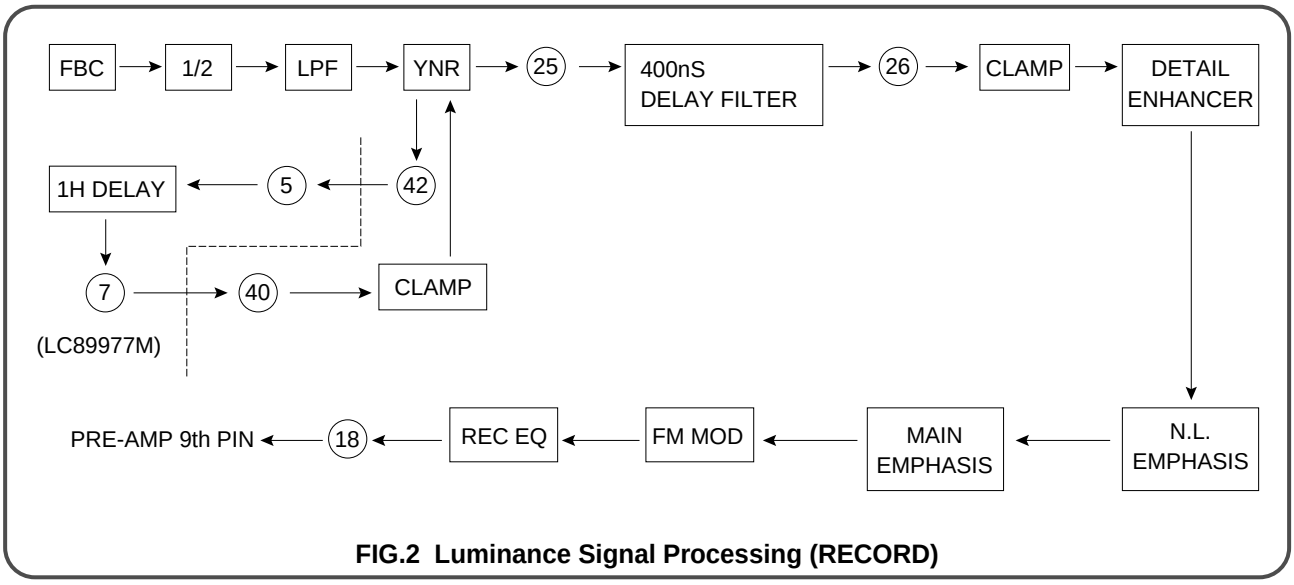


FIG.2 Luminance Signal Processing (RECORD)

The input signal through FBC is reduced a half(-6dB) of its level and then the pure luminance signal is obtained by LPF. In YNR(luminance noise reduction) circuit, noise is eliminated using the original signal and the 1H delayed signal.
The DETAIL ENHANCER enhances the overall high-frequency response, so an object with fine lines (such as a lawn, hair etc.) can be seen more clearly during PLAYBACK.
The NONLINEAR EMPHASIS and MAIN EMPHASIS can minimize the triangular noise susceptible to frequency modulation.
The luminance signal is FM-modulated and then is supplied to RECORD EQUALIZER for compensating the high frequency response related to HEAD characteristic, where its RECORD EQ is determined by the GROUP 4, LSB 1-4 bits of I^2C serial control.

2) CHROMINANCE SIGNAL PROCESSING (RECORD)

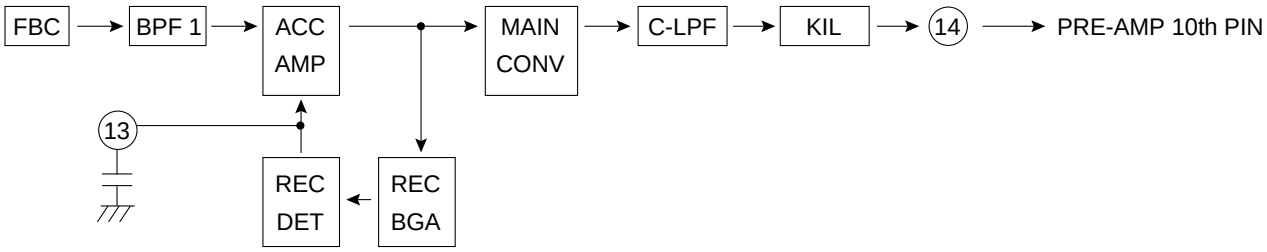


FIG.3 Chrominance Signal Processing (RECORD)

The pure chrominance signal is obtained by BPF1 (fsc : 4.43MHz), which filters the input signal through FBC.
The gain of ACC AMP is controlled by the DC voltage at 13th pin.
The main converter down-converts the chrominance signal with signal carrier of 4.43MHz to the signal with signal carrier of 627KHz.
The down-converted signal is again filtered by the LPF, so the pure chrominance component is maintained.
Meanwhile, the burst level of the ACC AMP output signal is detected by the burst gate, and it determines the activation of color killer.

2. PLAYBACK PROCESSING

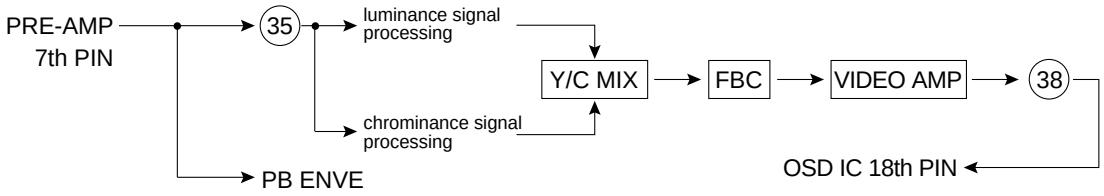


FIG.4 Playback Processing

PLAYBACK ENVELOPE signal from the PRE-AMP IC is supplied to the 15th pin of A/V IC for processing the PAL color, luminance respectively.
The output signal through Y/C MIX after each processing of chrominance and luminance is supplied to the 18th pin of OSD IC.

1) LUMINANCE SIGNAL PROCESSING (PB)

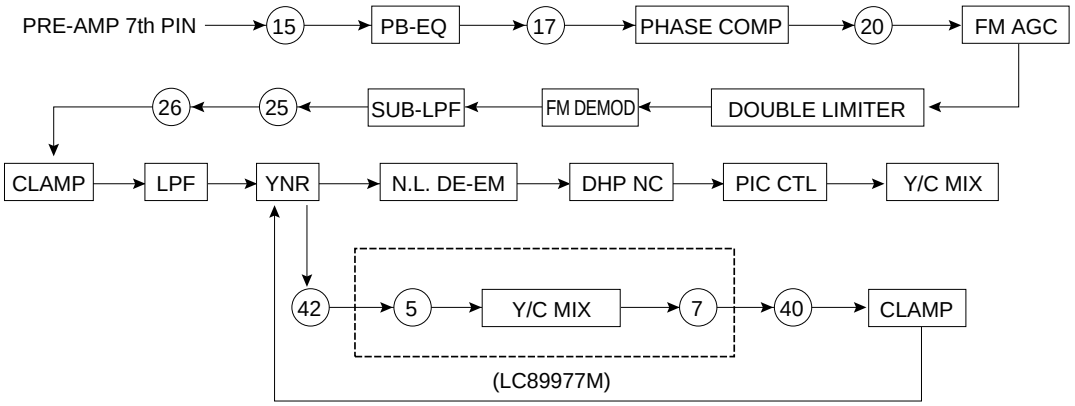


FIG.5 Luminance Signal Processing (PB)

The PLAYBACK ENVELOPE signal is equalized by the PB-EQ, which flattens the whole frequency characteristic.
And the PB-EQ is determined by the GROUP , MSB 7-8 bits.
Phase compensation part improves the pulse characteristics.
DOUBLE LIMITER restores the high frequency portion, and eliminates the spike noise, and AM components.
The signal through DOUBLE LIMITER is then demodulate, and then the RECORD NONLINEAR EMPHASIS characteristic is compensated by the DE-EMPHASIS.
Double High Pass Noise Canceller eliminates the high frequency noise against PB signal.
The Picture Control circuit improves the picture sharpness, while its characteristic is determined by the GROUP 8, LSB 1-4 bits.

2) CHROMINANCE SIGNAL PROCESSING (PB)

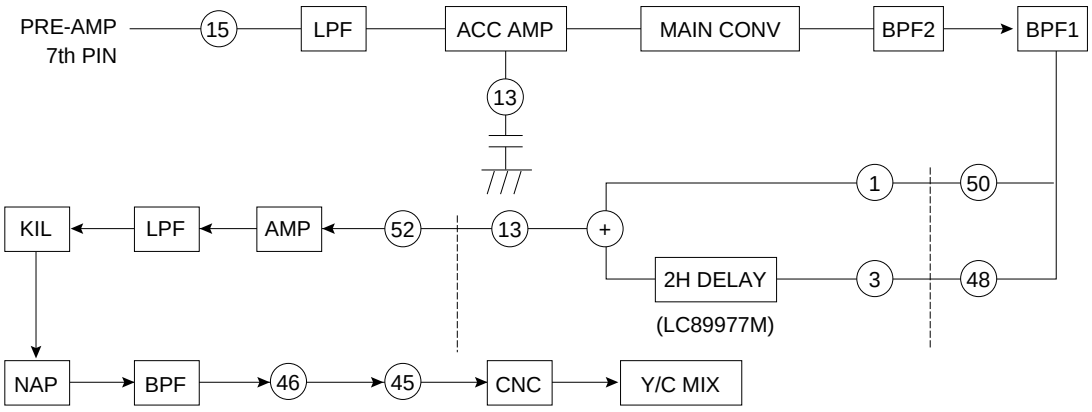
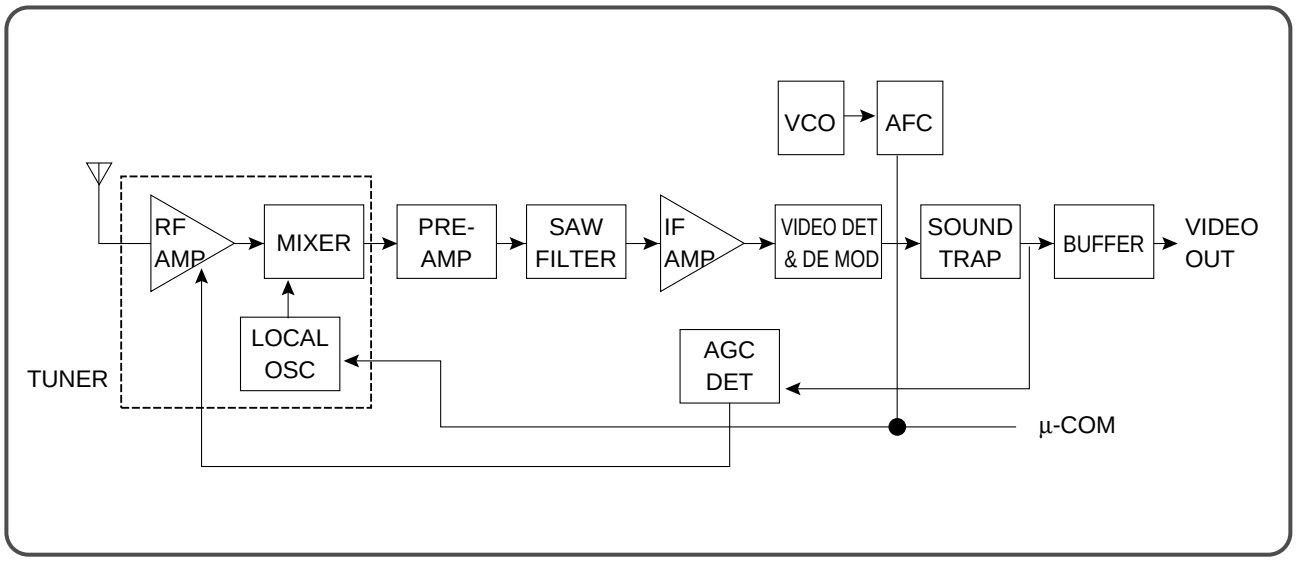


FIG.6 Chrominance Signal Processing (PB)

The down-converted chrominance signal is obtained from PB ENVE signal by LPF first. And then the signal is up-converted to 4.43MHz by the MAIN CONVERTER.
The redundant harmonics is filtered out by the BPF, and then the signal is applied to the CCD IC to reduce the chrominance crosstalk.
The NTSC PLAYBACK is possible on PAL/SECAM SYSTEM by the NAP circuit, the activation of which is determined by GROUP 7, MSB 7-8 bits.
The signal is then applied to Color Noise Canceller and mixed together with the luminance signal.

3-4. IF Circuit Operation

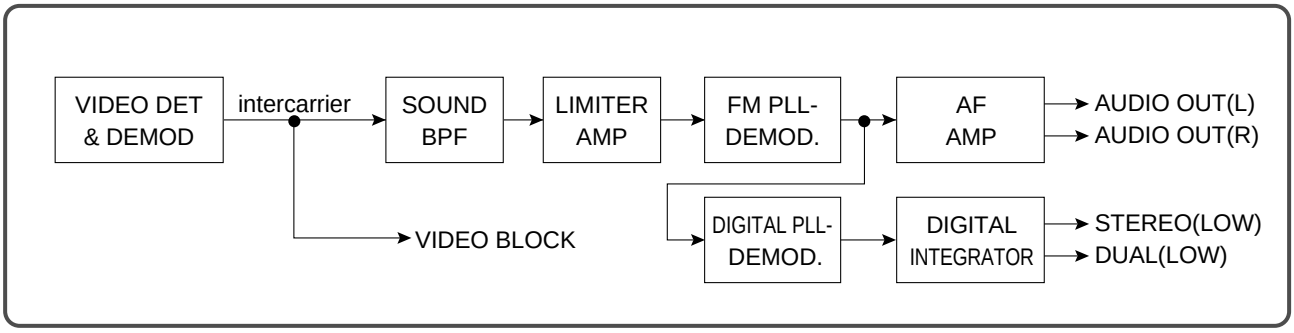
1. VIDEO SIGNAL FLOW



The signal from the ANT is amplified for selectivity, to decrease image interference, and increase S/N using the RF AMP. The RF signal at the MIXER is subtracted from the LOCAL OSC frequency using the upperside band method, to change it into the IF signal; 38.9MHz. The IF signal converted from the RF signal in the tuner block is amplified by about 20dB to increase S/N in the pre-amp block. The reason for thesis that the SAW filter has its own insertion loss of about -18 to -22dB. The SAW filter is a kind of BPF, used to remove the near channel harmonics and make the desired frequency response. The IF AMP desired of about 60 to 70dB gain for receiver sensitivity and selectivity. The vision IF AMP consists of three AC-coupled differential amplifier stages; each stage uses a controlled feedback network called AGC. To maintain the video output signal at a constant level the automatic control voltage is generated according to the transmission standard. For negative modulation in the PAL standard the peak-sync level is detected. The AGC detector charges and discharges the AGC capacitor to set the IF gain and the tuner gain. We can also adjust the tuner AGC voltage take over point. This allows the tuner and the IF SAW filter to be matched to achieve the optimum IF input signal. The IF amplifier output signal is fed to a frequency detector and to a phase detector. The frequency detector is operational before lock-in. A DC current is generated which is proportional to the frequency difference between the input signal and the VCO frequency. The control voltage for the VCO is provided by the phase detector. The demodulate output signal is fed via an integrated LPF (about 12MHz) to the video amplifier for suppression of the carrier harmonics.

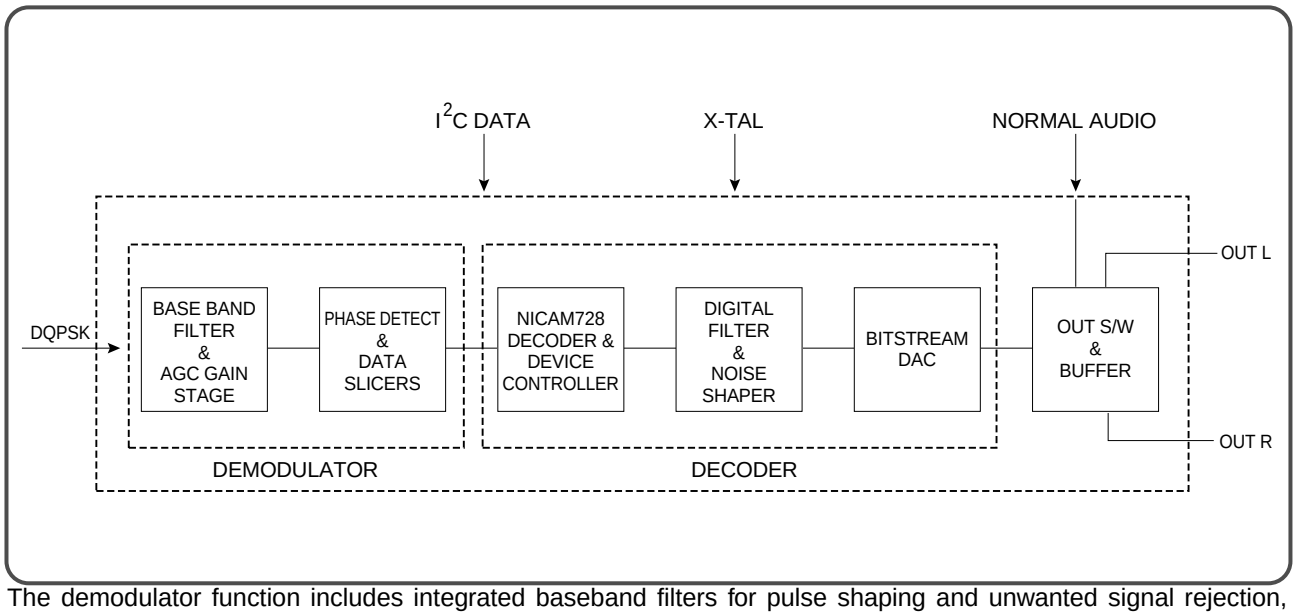
The VCO operates with a symmetrically-connected reference L-C circuit, running at the double vision carrier frequency (77.8MHz) to decrease the frequency error. Frequency control is performed by an internal varicap diode. The voltage used to set the VCO frequency to the actual double vision carrier frequency, is also amplified and converted to give the AFC output current. The AFC output is fed to the μ-COM to change the LOCAL OSC frequency and for channel searching. The VCO signal is divided by-two in a travelling wave divider, which generates two differential output signals with exactly 90 degrees phase difference, independent of frequency. The video signal passing through the 5.5MHz sound trap is fed to the buffer.

2. PAL AUDIO FLOW (Two carrier)



The FM sound intercarrier signal passing through the 5.5MHz/5.74MHz (DK : 6.5MHz) sound BPF is fed to a limiter amplifier before it is demodulate. This gives high sensitivity and AM suppression. The limiter amplifier consists of seven internal AC-coupled stages, minimizing the DC offset. The FM-PLL demodulator consists of an RC-oscillator, loop filter and phase detector. The oscillator frequency is locked on to the FM intercarrier signal from the limiter amplifier. As a result of this locking, the RC-oscillator is frequency modulated. The modulating signal voltage is used to control the oscillator frequency using this technique, the FM-PLL works as a FM demodulator. The audio signal(AF1:L+R/2, AF2:R+pilot(AM)) passing through the stereo/dual sound processor. Its identification ensures safe operation by using internal digital PLL technique with extremely small bandwidth, synchronous detection and digital integration(switching the maximum 2.6s; identification concerning the main functions).
The audio signal(L, R) is amplified and coming out of the stereo/digital sound processor.

3. DIGITAL AUDIO FLOW



The demodulator function includes integrated baseband filters for pulse shaping and unwanted signal rejection, automatic gain control, a low jitter integrated VCO.
The decoder fucntion performs the descrambling, de-interleaving and reformatting operations required to recover the original data words.
The data words are processed through a stereo digital filter, digital de-emphasis network, second order noise shaper, and 256 times over sampling bitstream audio DAC.
The whole device supported by 8.192MHz crystal oscillator, and I²C serial data bus for communications with µ-com.
In the output stage out selector can automute the nicam signal to normal audio when the digital data have noise more than error rate.

4. TM BLOCK

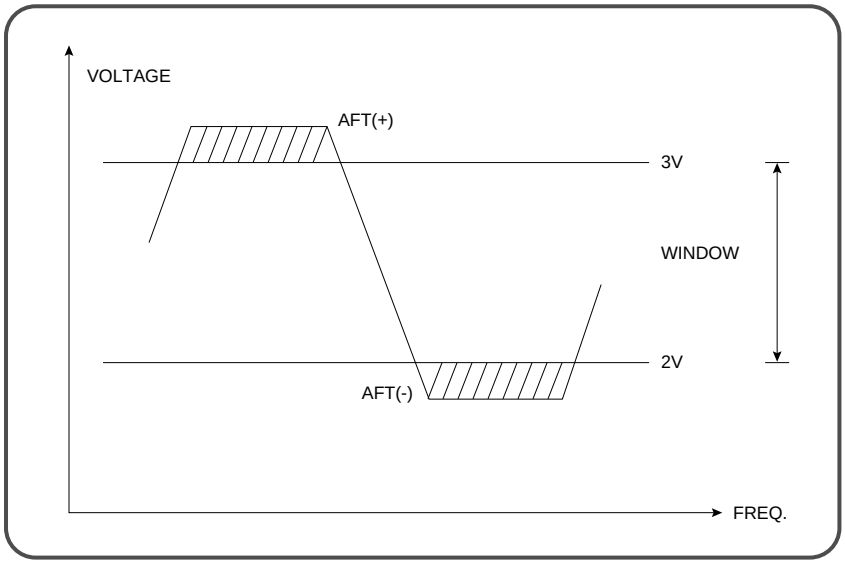
The TUNER and MODULATOR which is separated to each module conventionally, is presently united to one block (TM block)

(a) PLL METHOD AND I²C-BUS CONTROL

The RF OUTPUT channel can be varied from 22CH to 69CH by remote control using PLL method and I²C-BUS control.
Moreover, SYSTEM(PAL, MESECAM), SOUND CARRIER FREQUENCY, AND TPSG(TEST PATTERN SIGNAL GENERATOR) can be changed by remote control as well.
The P/S ratio, white clip, power saving, etc., also can be controlled only by changing a I²C-BUS data according to the designer's intention.

(b) DIGITAL AFT METHOD

Conventionally, when the frequency deviates, the variation of AFT output from IF circuit was compensated by feedbacking it to TUNER AFT input.
On the other hand, if AFT, which is currently adopted to these models from IF circuit deviates the window range, the VT value is changed to maintain the AFT voltage to be within window range by checking AFT(+) and AFT(-) on MICOM.



3-5. Normal Audio Signal Processing (LA71511M)

The circuitry of Normal AUDIO part is similar to that of the conventional Normal AUDIO part in case of EE and PB mode, but in REC mode, due to the internal operation of self-alignment, it shows a lot of differences.

1. EE MODE

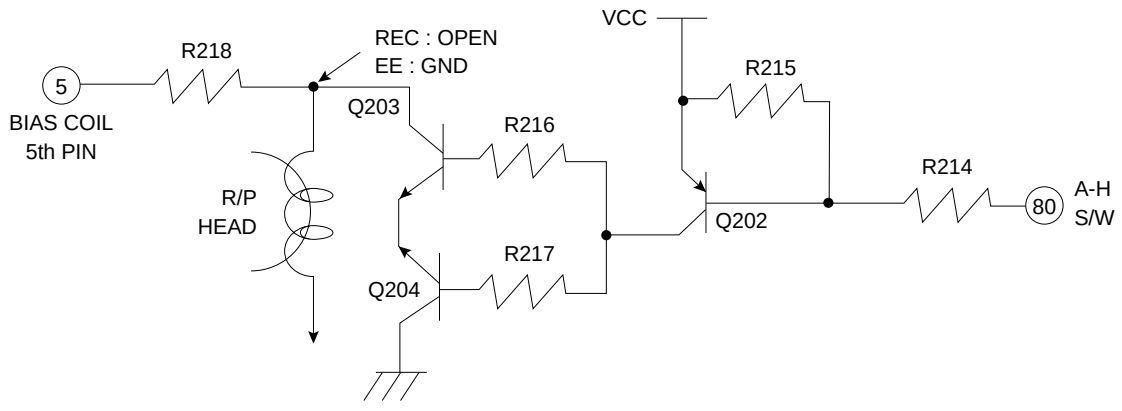
LA71511M has 3-input VIDEO/AUDIO switching circuitry internally, and its switching is controlled by the serial data dispatched from MICOM.
But for the suitable operation to these models, only One input is used. The Normal AUDIO signal from Hi-Fi Audio part is divided by the resistor, R202 and R203 and then supplied to the 73rd pin of LA71511M. Its level is automatically controlled by ALC and then the amplified signal through LINE AMP is obtained at the 77th pin.
The signal from C208 is supplied to REC AMP after the divider circuit (R204, R205, R207) and also to the Hi-Fi IC BH7804K.
The ALC point can be adjusted by R208 and R209, the adjustment of which is closely related to the REC level in REC mode.
The ALC time can be adjusted by R201 and C201.

2. PB MODE

The PB signal picked up from AUDIO HEAD is firstly processed in the frequency characteristic compensator which is composed of R220 and C214 (EP : C214+C215) and then supplied to the 7th pin.
The input signal passes through EQ AMP, and LINE AMP, so its output signal is finally obtained from the 77th pin.
The circuitry and its operation of EQ AMP is identical to the conventional EQ AMP.

3. REC MODE

1) AUDIO SWITCHING CIRCUIT
When the AUDIO S/W signal at the 80th pin is “H”, the point at the AUDIO HEAD of the external switching circuit is opened electrically (EE/PB=GND), so the COIL starts to oscillate.



External Switching Circuit

2) As long as the voltage difference between VCC and the 5th pin is maintained at 2.0~4.3V, the COIL oscillates. In other words, the COIL maintains to oscillate only if the voltage at the 5th pin is 0.7~3.0$V_{p\text{-}p}$.
Especially, when the R/P and FE HEAD impedance is at the center, the voltage at the 5th pin should be maintained at 1.85$V_{p\text{-}p}$, and, if not, when the HEAD impedance is MAX or MIN, the voltage at the 5th pin is liable to deviate the ranges of 0.7~3.0$V_{p\text{-}p}$.
The higher the FE HEAD impedance is or the lower the R/P HEAD impedance is, the higher the voltage at the 5th pin increases.
The AC signal is put on the DC voltage at the 5th pin, and it shows the internal AUTO BIASing.
The control signal at the 6th pin controls the TR(Q205) to ON/OFF, by which the AUTO BIASing is controlled.

3) The output AUDIO signal at the 1st pin through REC AMP is recorded on HEAD after being mixed with the 70KHz AC BIAS signal.
At the same time, the output AUDIO signal is supplied to the 3rd pin and then filtered by 60KHz HPF, so only the 70KHz AC BIAS signal is passed.
The pure 70KHz AC BIAS signal is then compared to the voltage of 440mV at the comparator, so the AC BIAS signal is controlled to maintain at 440mV.

4) The recording current is determined by the 440mV$_{rms}$ BIAS signal and the resistance between the 1st and the 3rd pin.

* The method to set the recording current.
BIAS = 440mV$_{rms}$ ÷ the resistance between the 1st and the 3rd pin.
ex) 440mV$_{rms}$ ÷ 1.8K OHM = 244μA

where, only the low error, G type resistor should be used here.
As a rule of thumb, the resistance between the 1st and the 3rd pin should range from 1.0 ohm to 2.2K ohm.

5) The conventional AUDIO circuitry uses a peaking COIL to enhance the high frequency region, but the LA71511M uses the resistance of R/P HEAD.
Accordingly, The resistor and the capacitor is used to fit the frequency characteristics.

4. BIAS COIL

For normal operation of AUTO BIAS, the oscillating voltage of R/P HEAD is over 40V$_{p-p}$, A/E HEAD is over 20V$_{p-p}$, and the FE HEAD is over 40V$_{p-p}$.
Especially, the erasing current of F/E HEAD ranges from 130 to 280mA, and it should be 180mA when the HEAD impedance is at the center.

3-6. Hi-Fi Audio Signal Processing (BH7804K)

1. SPECIAL FEATURES

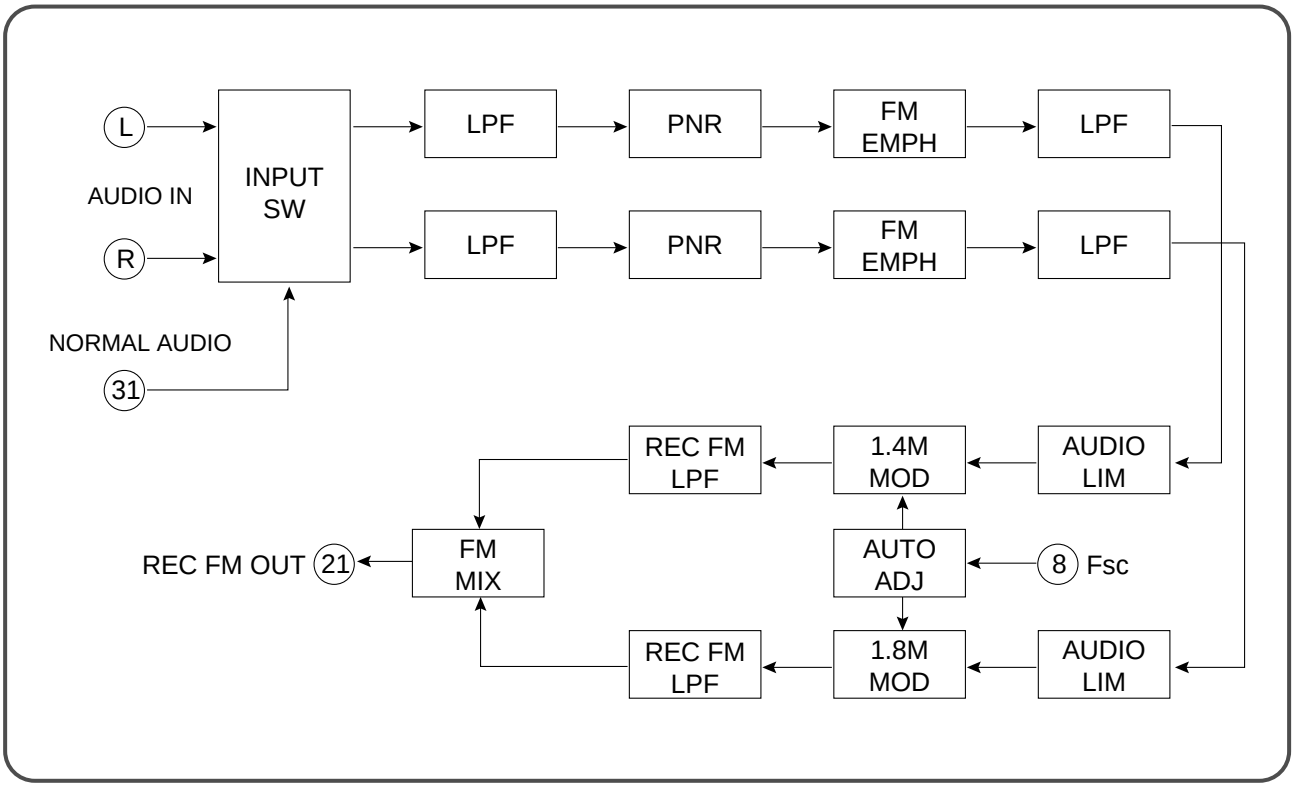
BH7804K processes the conventional Hi-Fi audio. and additionally, contains special parts as the below.

(1) As ±2 power source formula is adapted, decrease of coupling capacitor is possible. the REGULATOR circuit is built in.
(2) Built in I^2C bus control decoder circuit which has two lines formula, each mode for the inside of IC is set up by serial data.
(3) Reverse characteristics system during recording and playback are used in both the PNR (Peak Noise Reduction) processor and FM MODEM. And it can be simultaneous adjustment of carrier frequency and FM deviation/playback level. And it can be independent adjustment of FM deviation/playback level. (The adjustment of Lch and Rch is simultaneous.)
(4) Slope control FM switching noise correction circuit is built in.
(5) Auto adjust circuit of VCO and BPF making use of Fsc(4.43MHz) is built in. It is possible to adjust changelessly without drift by board mounting stress and time.

BA7746FS contains the functions as the below

(1) Built-in VCA for easy adjustment of play back output level.
(2) Total gain 79dB of low noise Pre amp for play back mode.
(3) Built-in LPF to regulate input band width of recording amp.
(4) Recording amp has high output current for audio FM recording.

2. REC MODE



(1) Signal Flow

In this system, the input signal sources are contained with IF, AV1, AV2/C+ and F.AV. each pin number's decription is the same as the below.

CH \ INPUT	IF	AV1	AV2/C+	F.AV
L	2	44	41	34
R	1	43	40	33

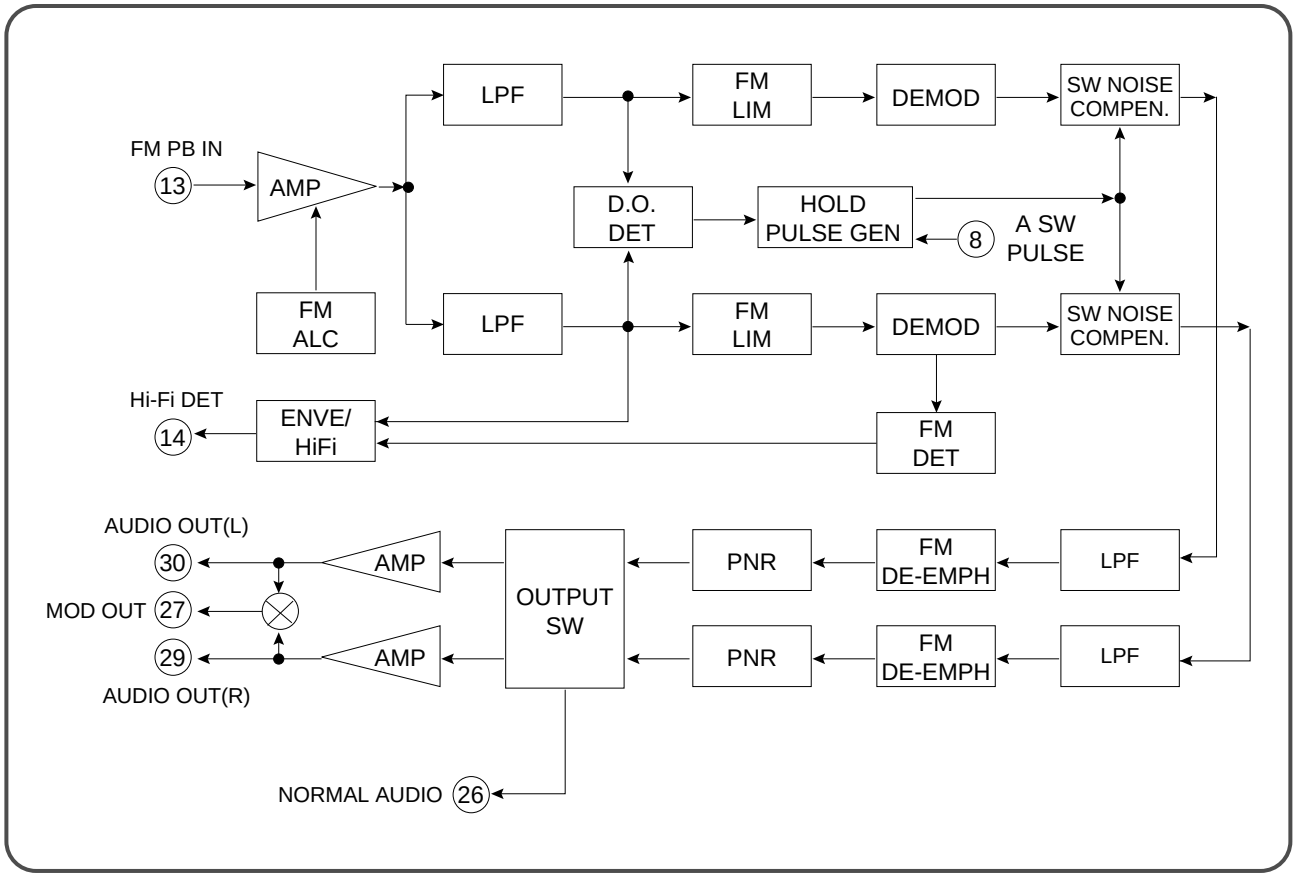
The input signals, selected by the input switcher, go through the LPF (at 20KHz) and PNR processor. Additionally, the selected input signals are supplied to the Normal Audio Unit-Pin 31st. The Normal Audio cab be mixed with the L+R-Stereo mode, or can be selected with L only-Bilingual mode. The PNR processor compresses the audio signal in order to reduce the audio noise and enlarge the Dynamic Range.

The FM EMPH(FM Emphasis) emphasizes the higher band of signal. It can restrict the FM back-noise, when the signal is demodulated. the modified audio signal is modulated by the Modulator unit. It is composed of AUDIO LIM(Limitter), 1.4MHz & 1.8MHz modulator. The Audio limiter cuts the level of signal to avoid the overmodulation, and then the limitted signal is modulated with two carriers-1.4MHz : Left Ch, 1.8MHz : Right Ch. The modulated two signals are mixed by the FM MIX unit. The mix ratio of FM L and R can be adjusted with the software-refer to the service mode. Finally, REC FM signal put out to the Pin 21st. It is supplied to the Hi-Fi preamp.

(2) Auto Adjustment of the VCO, BPF

In this IC, the FM carrier frequency and BPF are adjusted by the synthesized PLL VCO (Phase Locked Loop Voltage Control) unit. the Auto adjustment is executed at POWER ON, as using the Fsc-4.43MHz. The Fsc is supplied from the OSC for Color Sub-carrier in the Video unit. If the adjustment completes successfully, IC's pin 14th is set the "HIGH" state-5V. Otherwise "LOW" state-0V. The adjustment of VCO, BPF occurs simultaneouslly.

3. PB MODE



(1) Signal Flow

FM signal input to the Pin 13rd is amplified, and ditributed to the two BPFs-1.4MHz and 1.8MHz. The band passed FM signals are supplied to the De-Modulator unit. First, the FM LIM confines the FM to the limitted level, and then the signals are demodulated. The converted audio signals are compensated by the SW NOISE COMPEN. The signals are passed by the LPF, and de-emphasized by the FM DE-EMPH in order to restrict the FM back-noise. The PNR processor expands the signals and reduces the audio noise.

The two Line AMPs amplifiy the audio level, and supply to the Audio Out Pin 30th, 29th. The Mod out Pin 27th is and mixed audio output port for the RF-modulator. The Output SW is available to select the audio output of Left+Right (Stereo), Left only, Right only and Normal Audio. The Pin 26th is the input port for Normal audio.

(2) Noise Compensation and Hi-Fi Detect

In the Hi-Fi audio system, the noise trouble occurs, when the FM signal is defective. The defection of FM signal is due to the Drop Out which is scratched on the surface of tape, and the audio SW noise. If the D.O. DET detects the Drop Out of FM signal, it requires the HOLD PULSE GEN to generate the hold pulse, and then compensate the noise. And the HOLD PULSE GEN generates the regular pulse by the Audio SW pulses, then send the control signal to the SW NOISE COMPEN which compensates the noise.

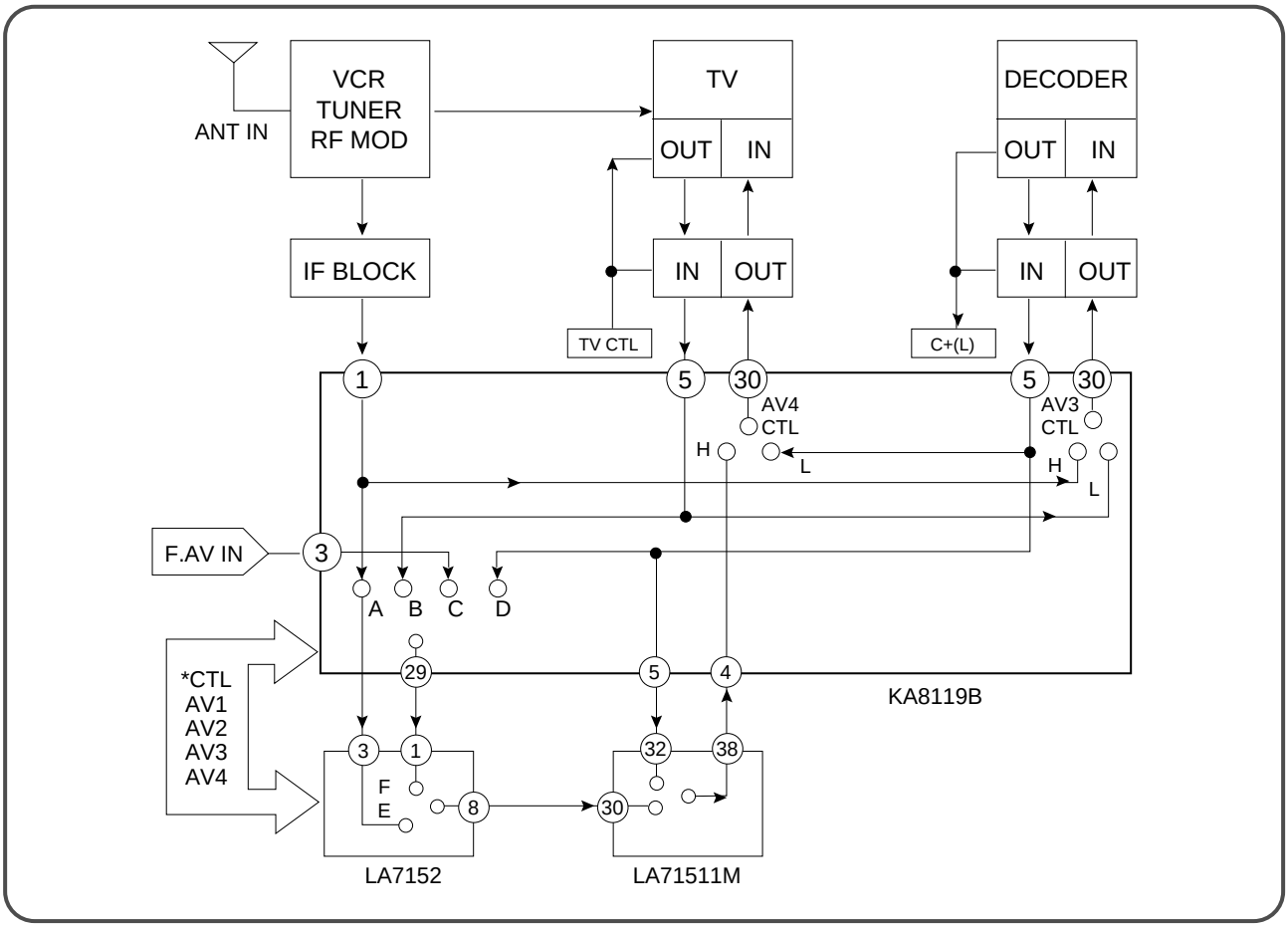
The ENVE/HiFi discreminates the Hi-Fi audio from the Normal audio. If the envelope of FM Hi-Fi exists, “High”-5V-control signal is out to the Pin 14th. Otherwise Control voltage is 0.

3-7. Video/Audio Switching Circuit

1. KA8119B : Special Functions & Features
(1) Internal Audio/Video Switch for C+. (2-input, 1-output)
(2) Internal Video Selector. (4-input, 1-output)
(3) Internal Video 6dB Amp
(4) Distinguished Supply Voltage. (Audio : 9V, Video : 5V)

2. LA7152 : 3 input, 1 output Video Switcher

3. BLOCK DIAGRAM



Selection Table For K8118B

SEL	AV3 CTL	AV2 CTL	AV1 CTL	Remarks
A	L	L	H	Video Selector Only
B	L	L	L	
C	L	H	L	
D	H	-	-	

Selection Table For LA7152

SEL	AV3 CTL	AV2 CTL	AV1 CTL	Remarks
E	H	H	H	Only Case 12 & 13 in C+ SW Mode
F	All cases are selected except for E			

4. SWITCHING OPERATION

In this switching system, Video signals are selected by two A/V SW ICs (KA8119B & LA7152), Audio signals are separately selectd by Hi-Fi IC itself which was controlled by the I²C bus. - W3D1, W3D2 mean the serial data bits for the selection. -Refer below the table.

Audio Sel	W3D1	W3D2	Remarks
Tuner	L	L	
AV1	H	L	
AV2 or C+ decoder	L	H	
F.AV	H	H	

KA8119B contains the C+ SWs for Audio and Video signals. So Video and Audio signals are controlled by AV3 and AV4 at the same time.
The item “Video Sel” means the input pin number of AV one chip IC(LA71511M). At the case 15, 16 Video input shall be selected with Pin 32 (C+ discrambled signal).
If the power’s off at the state selected with F.AV, the SW mode is Case 16, 17 (For only VCR mode).

(1) CANAL plus mode.

MODE	TV/ VCR	TUNER /AV /F.AV	REC	C+ MEM	C+	TV CTL	AV4 CTL	AV3 CTL	AV2 CTL	AV1 CTL	VIDEO SEL	AUDIO SEL		REMARKS
												W3D1	W3D2	
POWER OFF	-	TUNER	-	-	NO	L	H	L	L	H	PIN30	L	L	Case 1
					YES	H	L	L	L	H	PIN30	L	L	Case 2
	-	AV	-	-	NO	L	H	L	L	L	PIN30	H	L	Case 3
					YES	H	L	L	L	L	PIN30	H	L	Case 4
PLAY	TV	-	-	-	NO	L	H	L	L	H	PIN30	L	L	Case 5
					YES	H	L	L	L	H	PIN30	L	L	Case 6
	VCR	-	-	-	-	H	H	L	L	H	PIN30	L	L	Case 7
EE	TV	TUNER	NO	-	NO	L	H	L	L	H	PIN30	L	L	Case 8
					YES	H	L	L	L	H	PIN30	L	L	Case 9
			YES	NO	NO	L	H	L	L	H	PIN30	L	L	Case 10
					YES	H	L	L	L	H	PIN30	L	L	Case 11
				YES	NO	L	H	H	H	H	PIN30	L	L	Case 12
					YES	L	H	H	L	H	PIN30	L	H	Case 13
		AV	-	-	NO	L	H	L	L	L	PIN30	H	L	Case 14
					YES	H	H	L	L	L	PIN32	L	H	Case 15
		F.AV	-	-	NO	L	H	L	H	L	PIN30	H	H	Case 16
					YES	H	L	L	H	L	PIN30	H	H	Case 17
	VCR	TUNER	-	-	NO	H	H	H	H	H	PIN30	L	L	Case 18
					YES	H	H	H	L	H	PIN30	L	H	Case 19
		AV	-	-	NO	H	H	L	L	L	PIN30	H	L	Case 20
					YES	H	H	L	L	L	PIN32	L	H	Case 21
		F.AV	-	-	-	H	H	L	H	L	PIN30	H	H	Case 22
					-	H	H	L	H	L	PIN30	H	H	Case 23

- Case 1
  TV set : Watching & receiving the normal CH.
  VCR set : Power off, Input source is turner. TV set signal comes out to the decoder.

- Case 2
  TV set : Watching the C+ CH which is received by itself.
  VCR set : Power off, Input source is tuner, Discramble the C+ and supply it to the TV set.

- Case 3
  TV set : Watching & receiving the normal CH.
  VCR set : Power off, Input source is AV. TV set signal comes out to the decoder.

- Case 4
  TV set : Watching the C+ CH received on itself.
  VCR set : Power off, Input source is AV. Discramble the C+ and supply it to the TV set.

- Case 5
  TV set : Watching & receiving the normal CH.
  VCR set : Play mode. forced TV mode. TV set signal comes out to the decoder.

- Case 6
  TV set : Watching the C+ CH received on itself.
  VCR set : Play mode, forced TV mode. Discramble the C+ and supply it to the TV set.

- Case 7
  TV set : Watching the picture which is played on VCR set.
  VCR set : Play, auto VCR mode, TV set signal comes out to the decoder.

- Case 8
  TV set : Watching & receiving the normal CH.
  VCR set : EE, TV mode. Input source is tuner. TV set signal comes out to the decoder.

- Case 9
  TV set : Watching the C+ CH received on itself.
  VCR set : EE, TV mode. Input source is tuner. Discramble the C+ and supply it to the TV set.

- Case 10
  TV set : Watching & receiving the normal CH.
  VCR set : TV mode. No C+ Ch memory. Recording another normal CH received on the VCR set.
  TV set signal comes out to the decoder.

- Case 11
  TV set : Watching the C+ CH received on itself.
  VCR set : TV mode. No C+ CH memory. Recording another normal CH received on the VCR set.
  Discramble the C+ and supply it to the TV set.

- Case 12
  TV set : Watching & receiving the normal CH.
  VCR set : TV mode. C+ CH memory. Recording another normal CH received on the VCR set.
  VCR tuner signal comes out to the decoder because of C+ channel memory.

- Case 13
  TV set : Watching & receiving the normal CH.
  VCR set : TV mode. C+ CH memory. Recording C+ CH received on the VCR set.
  VCR tuner signal is discrambled and supplied to the REC path.
  In this case, the C+ received on TV cannot be discrambled.

- Case 14
  TV set : Watching & receiving the normal CH.
  VCR set : EE, TV mode. Input source is AV. TV set signal comes out to the decoder.

- Case 15
  TV set : Watching the C+ CH received on itself.
  VCR set : TV mode. Input source is AV. Discramble the C+ and supply it to the TV set.
  If a user press the REC button, the VCR set record the Discrambled TV signal.

- Case 16
  TV set : Watching & receiving the normal CH.
  VCR set : EE, TV mode. Input source is F.AV. TV set signal comes out to the decoder.
  If a user press the REC button, the VCR set record the F.AV signal.

- Case 17
  TV set : Watching the C+ CH received on itself
  VCR set : EE, TV mode. Input source is F.AV. Discramble the C+ and supply it to the TV set.
  Although a user press the REC button, the VCR set record the F.AV signal.

- Case 18
  TV set : Watching the normal CH received on VCR set.
  VCR set : EE, VCR mode, Input source is tuner. Tuner signal comes out to the decoder.
  If a user press the REC button, the VCR set record the tuner signal.

- Case 19
  TV set : Watching the C+ CH received on VCR set.
  VCR set : EE, VCR mode. Input source is decoder . Tuner signal is descrambled and supplied to the REC path.

- Case 20
  TV set : Watching the VCR set's AV signal (TV signal).
  VCR set : EE, VCR mode. Input source is AV. AV signal comes out to the decoder.
  If a user press the REC button, the VCR set record the AV signal.

- Case 21
  TV set : Watching the C+ CH received on itself. (VCR set's AV signal).
  VCR set : EE, VCR mode. Input source is AV. Discramble the C+ and supply it to the TV set.

- Case 22, 23
  TV set : Watching the VCR set's F.AV signal.
  VCR set : EE, VCR mode. Input source is F.AV. TV set signal comes out to the decoder.
  If a user press the REC button, the VCR set record the F.AV signal.

(2) Three input One output mode.

MODE	TV/VCR	TUNER /AV1/AV2 /F.AV	C+	TV CTL	AV4 CTL	AV3 CTL	AV2 CTL	AV1 CTL	VIDEO SEL	AUDIO SEL		REMARKS
										W3D1	W3D2	
POWER OFF	-	TV	H	L	L	L	L	H	PIN30	H	L	
			L	H	L	L	L	H	PIN30	H	L	
	-	AV1	H	L	L	L	L	L	PIN30	L	L	
			L	H	L	L	L	L	PIN30	L	L	
	-	AV2	H	L	L	H	-	-	PIN30	L	H	
			L	H	L	H	-	-	PIN30	L	H	
PLAY	TV	-	-	L	H	L	L	H	PIN30	H	L	CH SEARCH
	VCR	-	-	H	H	L	L	H	PIN30	H	L	CH SEARCH
EE/REC	TV	TV	-	L	H	L	L	H	PIN30	H	L	
	VCR			H	H	L	L	H	PIN30	H	L	
	TV	AV1	-	L	H	L	L	L	PIN30	L	L	
	VCR			L	H	L	L	L	PIN30	L	L	
	TV	AV2	-	L	H	H	-	-	PIN30	L	H	
	VCR			H	H	H	-	-	PIN30	L	H	
	TV	F.AV	-	L	H	L	H	L	PIN32	H	H	
	VCR			H	H	L	H	L	PIN30	H	H	

(3) Two input One output mode.

MODE	TV/VCR	TUNER /AV1/AV2 /F.AV	C+	TV CTL	AV4 CTL	AV3 CTL	AV2 CTL	AV1 CTL	VIDEO SEL	AUDIO SEL		REMARKS
										W3D1	W3D2	
POWER OFF	-	TUNER	H	L	L	L	L	H	PIN30	H	L	
			L	H	L	L	L	H	PIN30	H	L	
	-	AV1	H	L	L	L	L	L	PIN30	L	L	
			L	H	L	L	L	L	PIN30	L	L	
PLAY	TV	-	-	L	H	L	L	H	PIN30	H	L	
	VCR	-	-	H	H	L	L	H	PIN30	H	L	
EE/REC	TV	TV	-	L	H	L	L	H	PIN30	H	L	CH SEARCH
	VCR			H	H	L	L	H	PIN30	H	L	CH SEARCH
	TV	AV1	-	L	H	L	L	L	PIN30	L	L	
	VCR			H	H	L	L	L	PIN30	L	L	
	TV	F.AV	-	L	H	L	H	L	PIN30	H	H	
	VCR			H	H	L	H	L	PIN30	H	H	

• SAFETY CHECK AFTER SERVICING

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

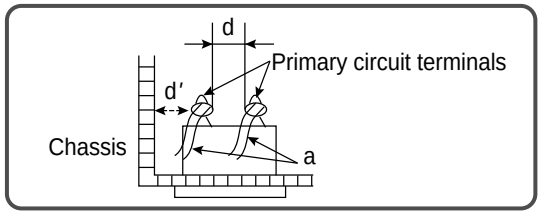


Fig.1

Table 1: Rating for selected areas

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance (d), (d')
100V	Japan	≥ 1MΩ/500V DC	1kV AC 1 minute	≥ 3 mm
110 to 130V	USA & Canada	–	900V AC 1 minute	≥ 3.2 mm
*110 to 130V 200 to 240V	Europe Australia	≥ 4MΩ/500V DC	3kV AC 1 minute	≥ 3mm (d) ≥ 6mm (d') (a : Power cord)

*Class IImodel only.

Note: This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

4. Leakage current test

Confirm specified or lower leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks etc.)

Measuring Method: (Power ON)
Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use and AC voltmeter to measure across both terminals of load Z.
See figure and following table.

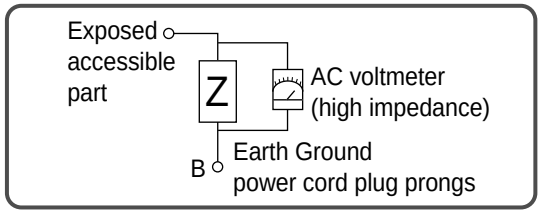


Fig.2

Table 2: Leakage current ratings for selected areas

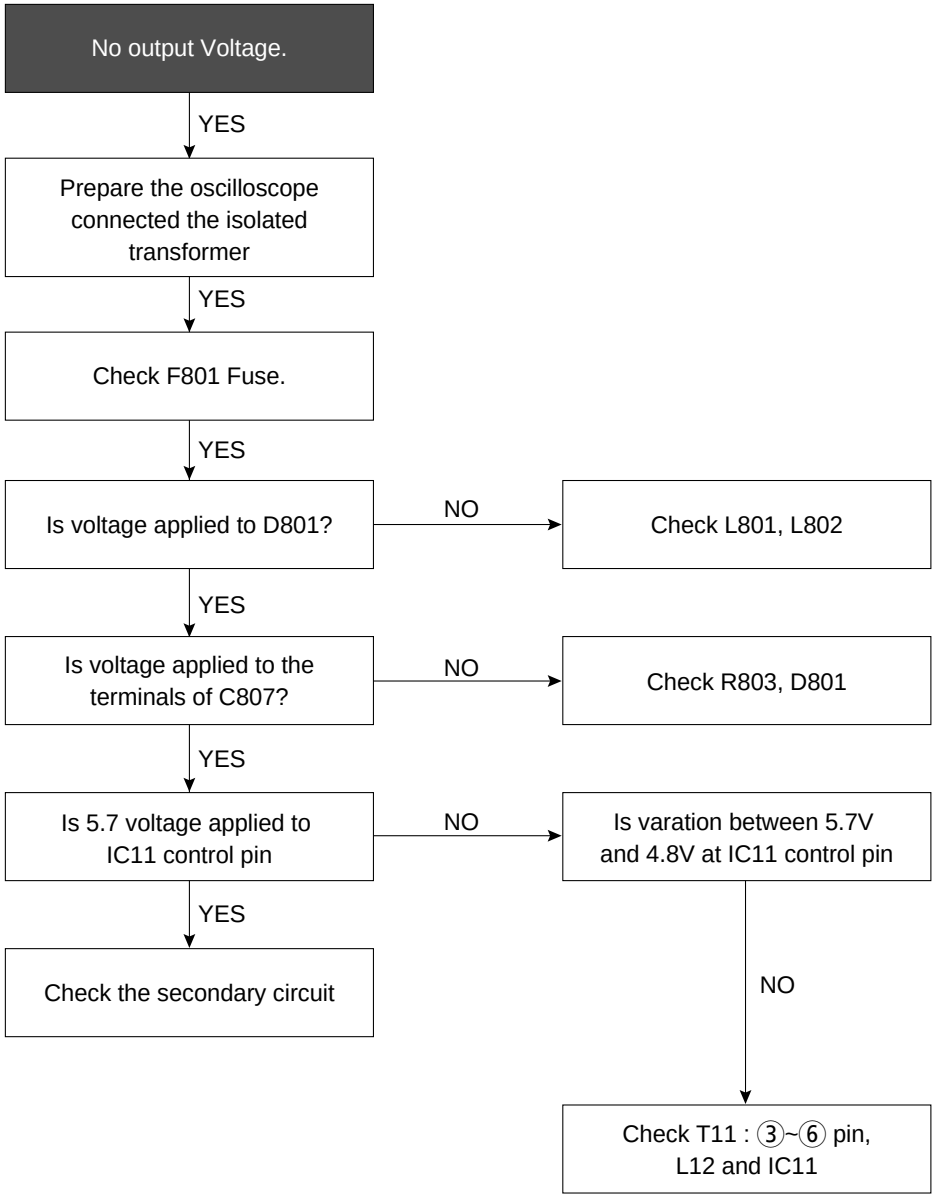
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
100V	Japan	1KΩ	i ≤ 1mA rms	Exposed accessible parts
110 to 130V	USA & Canada	1.5KΩ, 1.5kμF	i ≤ 0.5mA rms	Exposed accessible parts
110 to 130V 200 to 240V	Europe Australia	2KΩ	i ≤ 0.7mA peak i ≤ 2mA dc	Antenna earth terminals
		50KΩ	i ≤ 0.7mA peak i ≤ 2mA dc	Other terminals

Note : This table unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

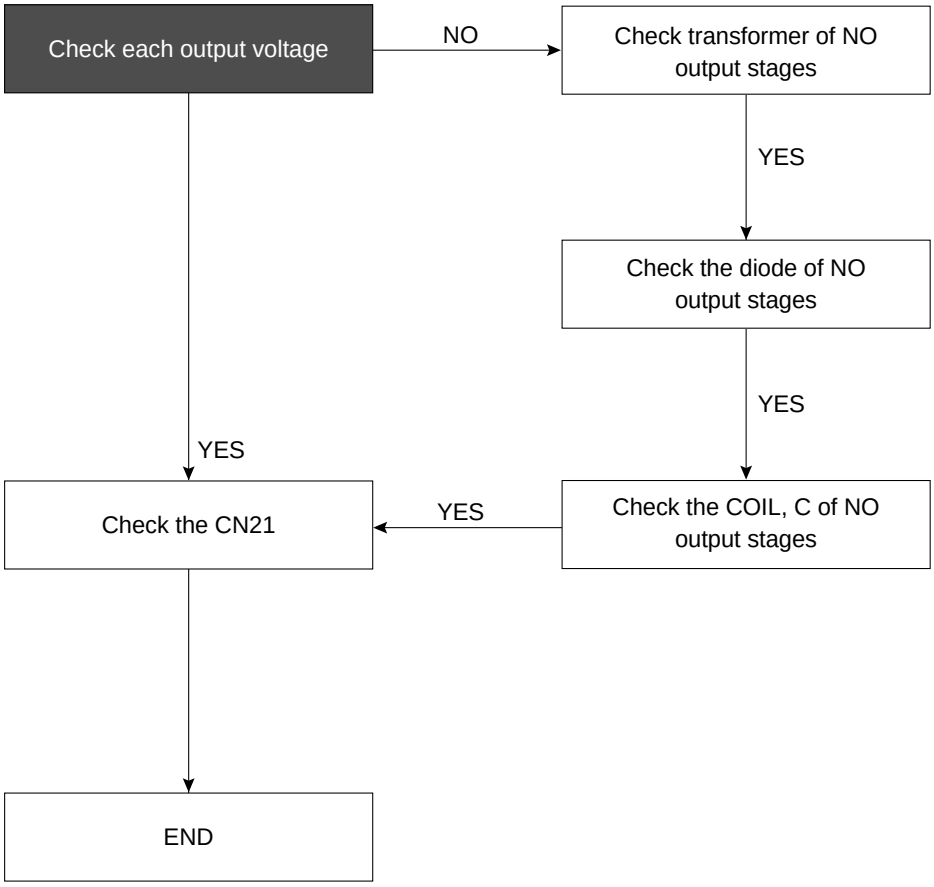
4-1. Power Circuit

When changing the parts which are broken first, remove the power plug from the socket and then discharge the voltage across the terminals of C807 (use an external 1KΩ(2W) resistance).
When check the primary circuit, Use the oscilloscope isolated properly (Use the isolated transformer) and connect GND to the primary GND, however it is not necessary to isolate the oscilloscope when check the secondary circuit.

A. CHECKING THE PRIMARY CIRCUIT.

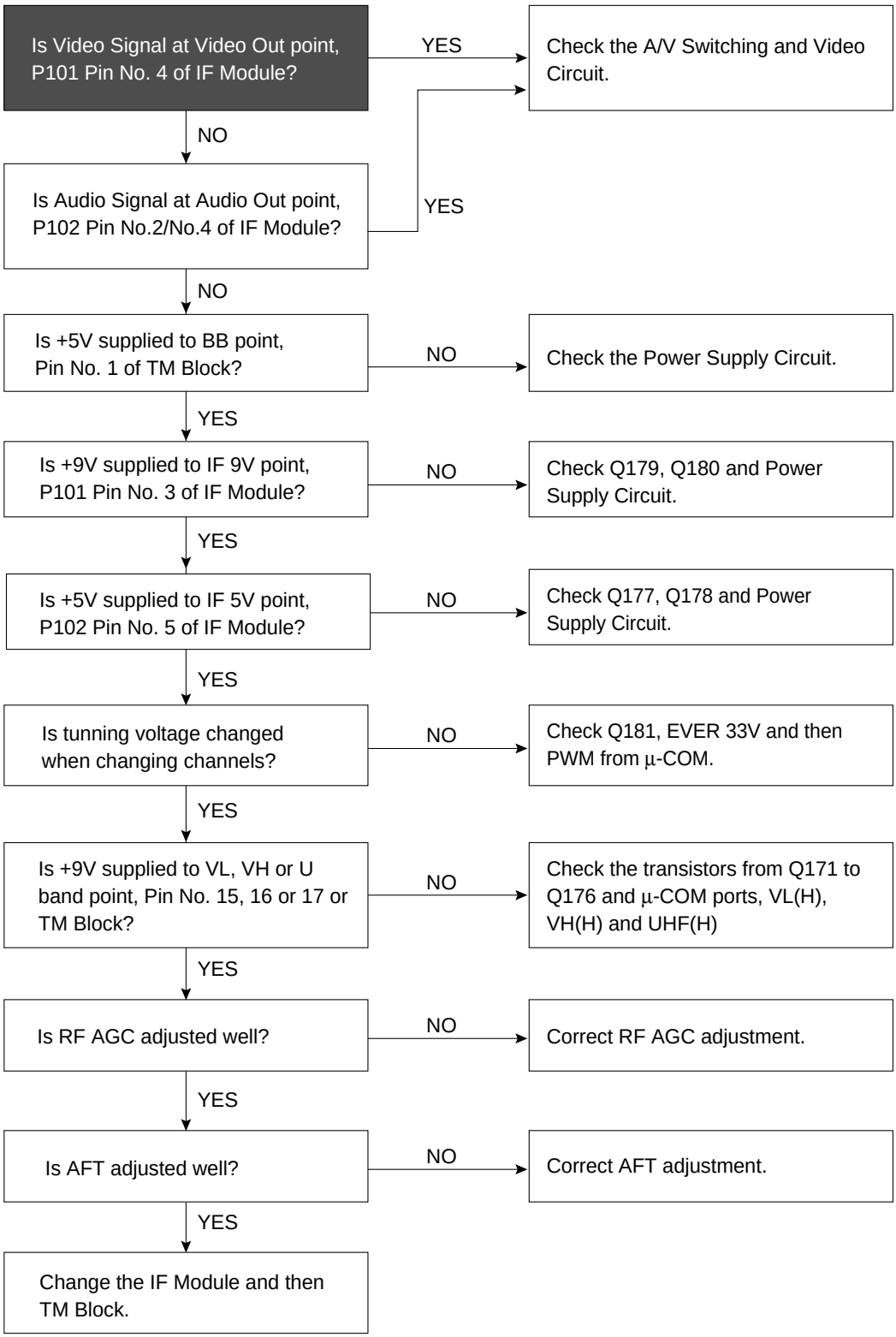


B. CHECKING THE SECONDARY CIRCUIT

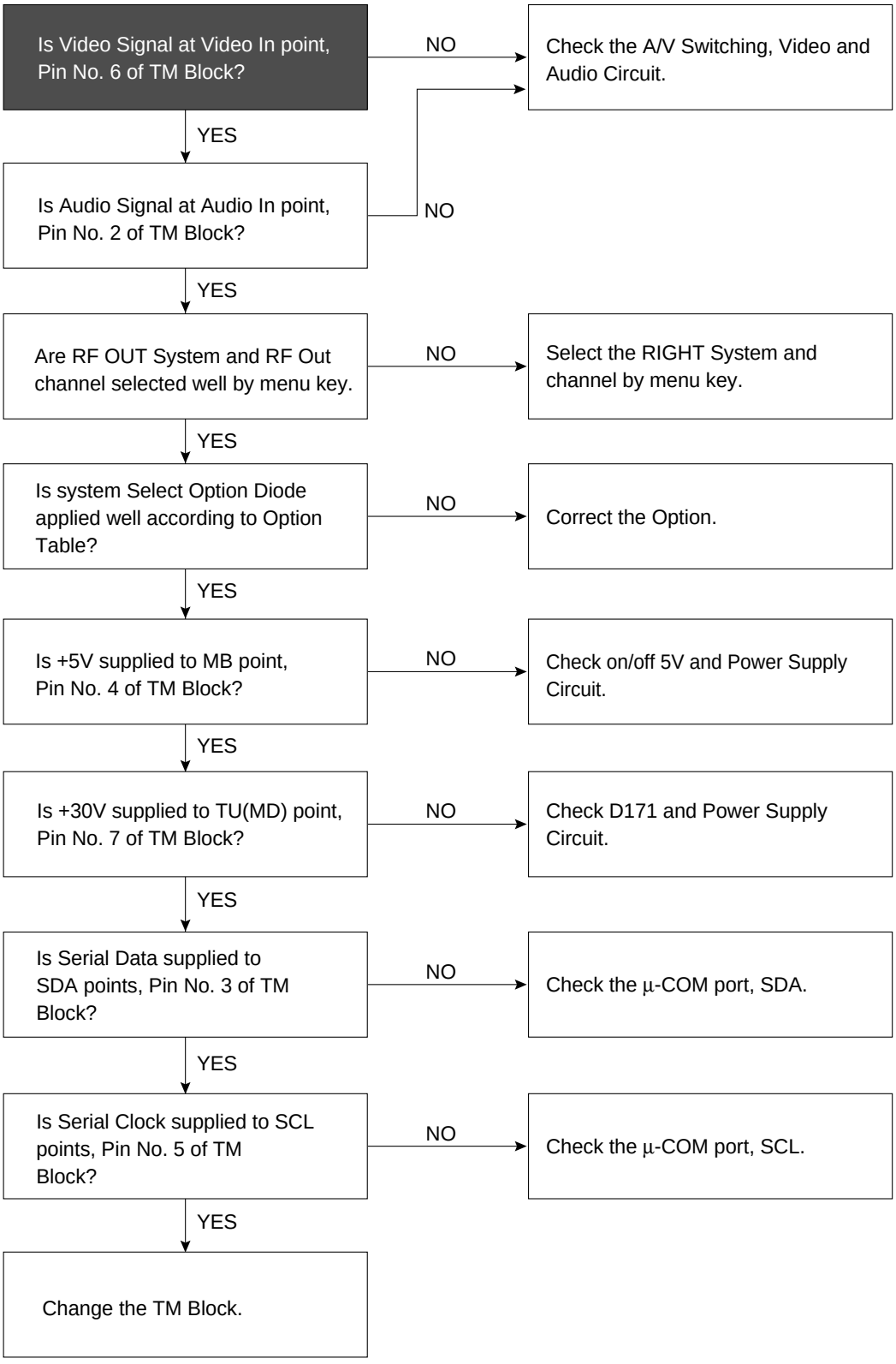


4-2. PIF Circuit Troubleshooting

A. TROUBLESHOOTING OF RF RECEIVING CIRCUIT

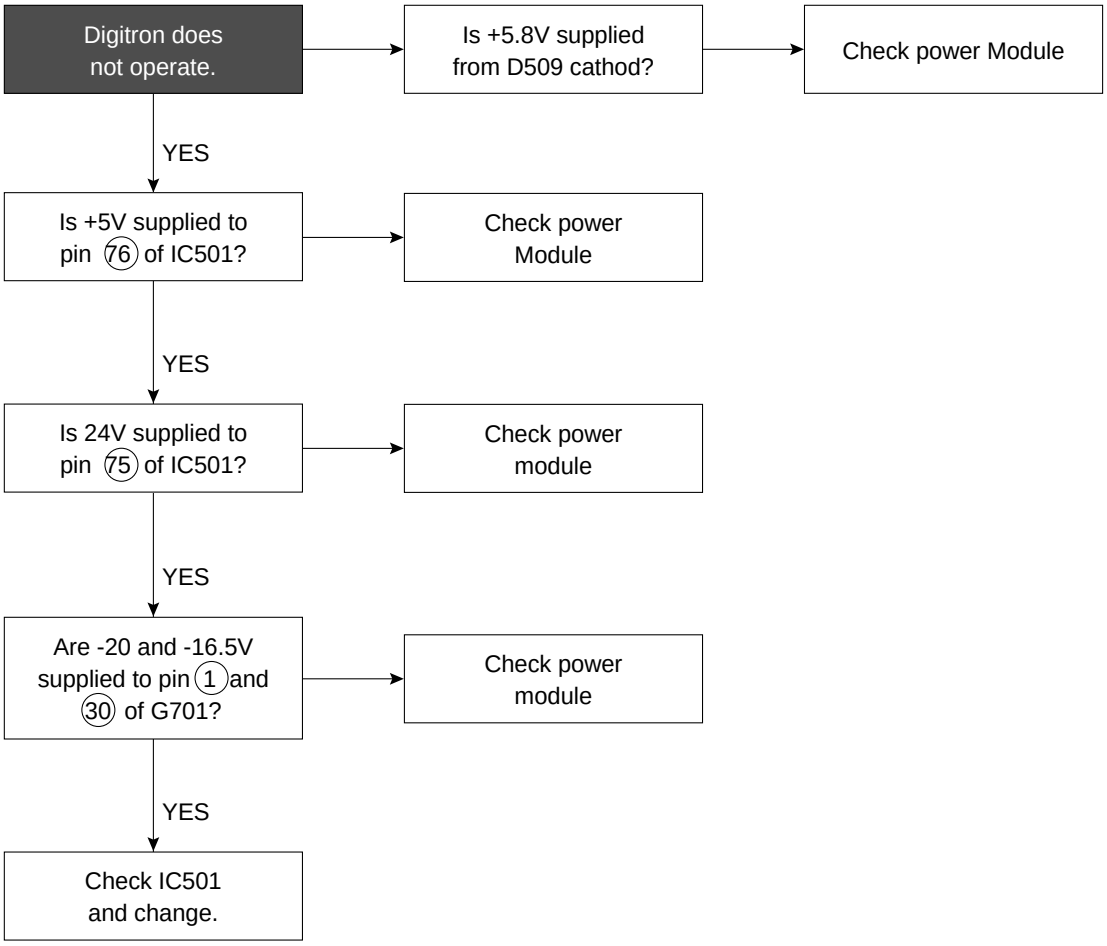

Is Video Signal at Video Out point, P101 Pin No. 4 of IF Module?
YES
Check the A/V Switching and Video Circuit.
NO
Is Audio Signal at Audio Out point, P102 Pin No.2/No.4 of IF Module?
YES
NO
Is +5V supplied to BB point, Pin No. 1 of TM Block?
NO
Check the Power Supply Circuit.
YES
Is +9V supplied to IF 9V point, P101 Pin No. 3 of IF Module?
NO
Check Q179, Q180 and Power Supply Circuit.
YES
Is +5V supplied to IF 5V point, P102 Pin No. 5 of IF Module?
NO
Check Q177, Q178 and Power Supply Circuit.
YES
Is tunning voltage changed when changing channels?
NO
Check Q181, EVER 33V and then PWM from μ-COM.
YES
Is +9V supplied to VL, VH or U band point, Pin No. 15, 16 or 17 or TM Block?
NO
Check the transistors from Q171 to Q176 and μ-COM ports, VL(H), VH(H) and UHF(H)
YES
Is RF AGC adjusted well?
NO
Correct RF AGC adjustment.
YES
Is AFT adjusted well?
NO
Correct AFT adjustment.
YES
Change the IF Module and then TM Block.

B. TROUBLESHOOTING OF RF MODULATOR OUT

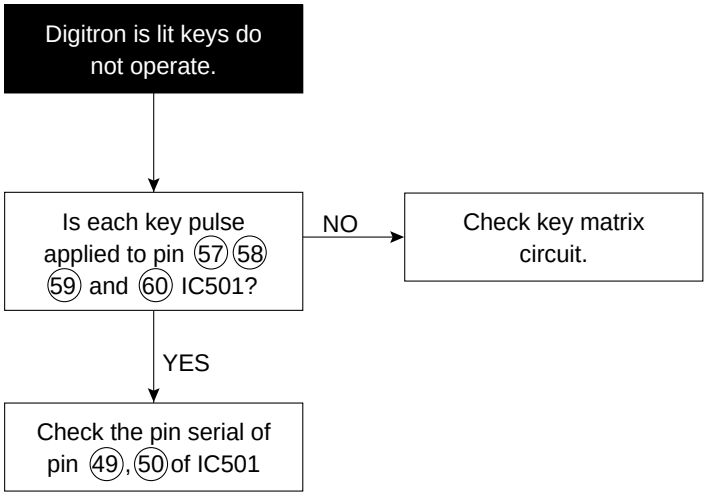

Is Video Signal at Video In point, Pin No. 6 of TM Block?
NO
Check the A/V Switching, Video and Audio Circuit.
YES
Is Audio Signal at Audio In point, Pin No. 2 of TM Block?
NO
YES
Are RF OUT System and RF Out channel selected well by menu key.
NO
Select the RIGHT System and channel by menu key.
YES
Is system Select Option Diode applied well according to Option Table?
NO
Correct the Option.
YES
Is +5V supplied to MB point, Pin No. 4 of TM Block?
NO
Check on/off 5V and Power Supply Circuit.
YES
Is +30V supplied to TU(MD) point, Pin No. 7 of TM Block?
NO
Check D171 and Power Supply Circuit.
YES
Is Serial Data supplied to SDA points, Pin No. 3 of TM Block?
NO
Check the μ-COM port, SDA.
YES
Is Serial Clock supplied to SCL points, Pin No. 5 of TM Block?
NO
Check the μ-COM port, SCL.
YES
Change the TM Block.

4-3. Logic Circuit

A.

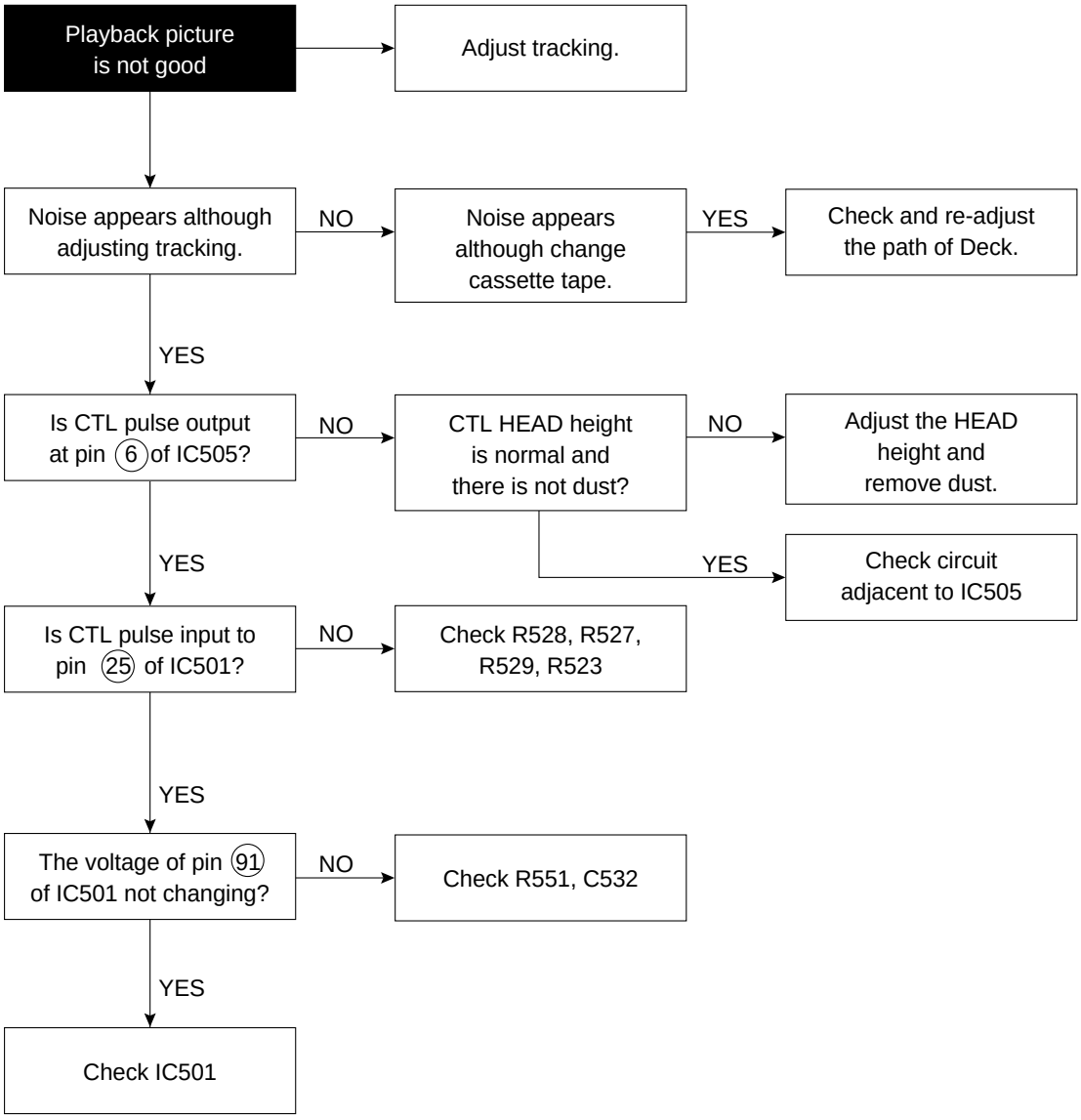

Digitron does not operate.
Is +5.8V supplied from D509 cathod?
Check power Module
YES
Is +5V supplied to pin 76 of IC501?
Check power Module
YES
Is 24V supplied to pin 75 of IC501?
Check power module
YES
Are -20 and -16.5V supplied to pin 1 and 30 of G701?
Check power module
YES
Check IC501 and change.

B.

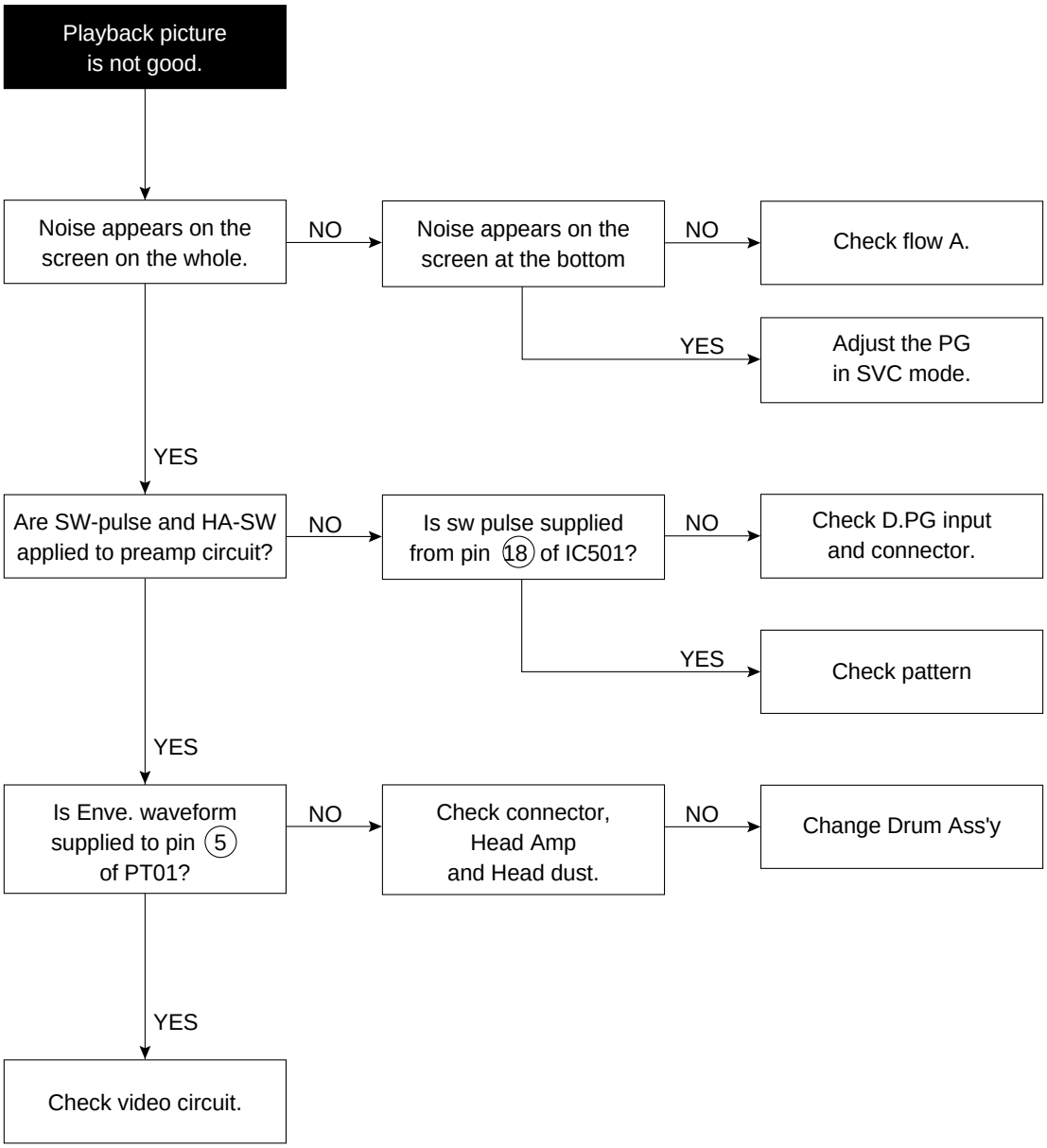

Digitron is lit keys do not operate.
Is each key pulse applied to pin 57 58 59 and 60 IC501?
NO
Check key matrix circuit.
YES
Check the pin serial of pin 49, 50 of IC501

4-4. Servo-Syscon Circuit

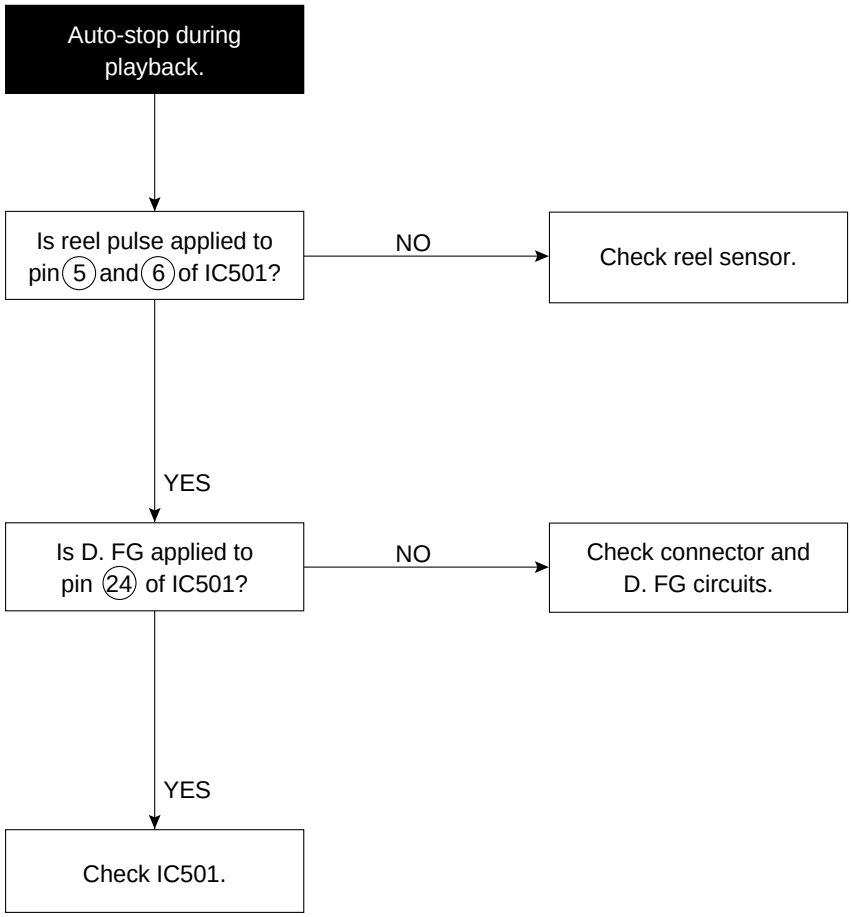
A.



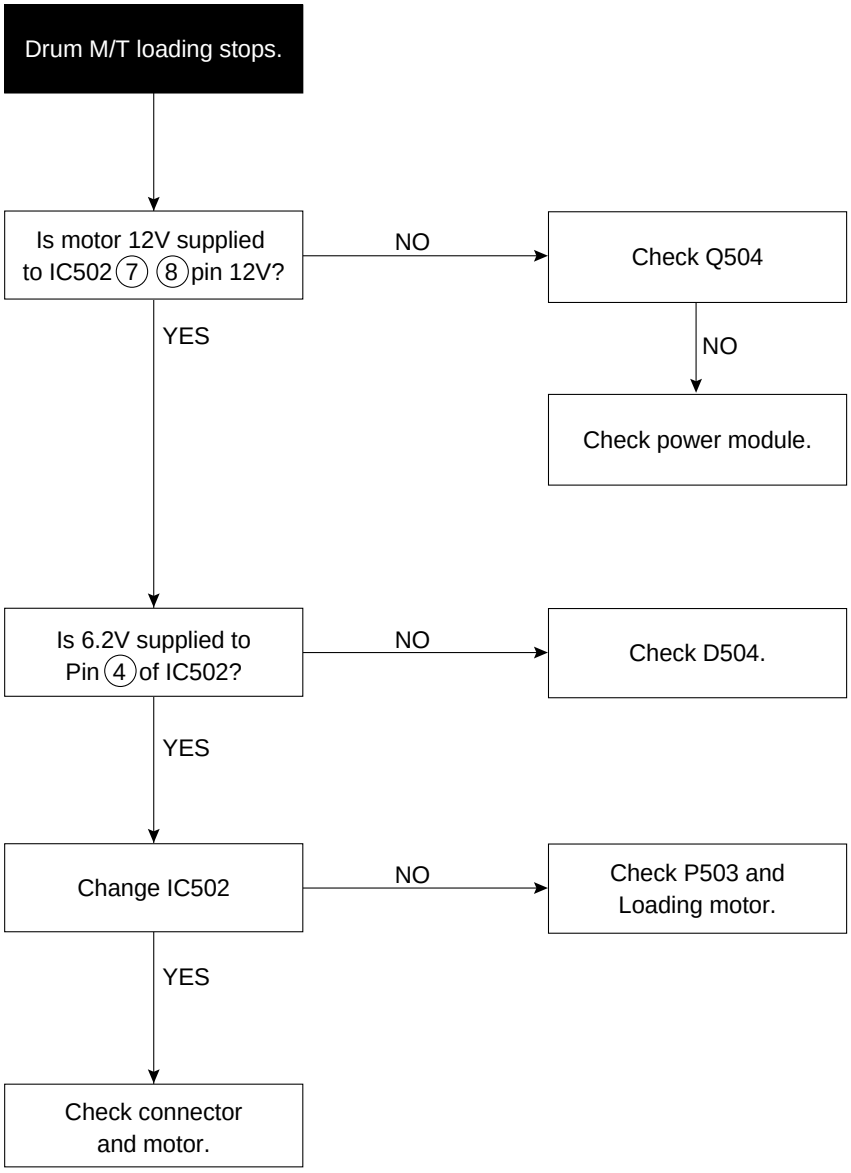
B.


Playback picture is not good.
Noise appears on the screen on the whole.
NO
Noise appears on the screen at the bottom
NO
Check flow A.
YES
Adjust the PG in SVC mode.
YES
Are SW-pulse and HA-SW applied to preamp circuit?
NO
Is sw pulse supplied from pin (18) of IC501?
NO
Check D.PG input and connector.
YES
Check pattern
YES
Is Enve. waveform supplied to pin (5) of PT01?
NO
Check connector, Head Amp and Head dust.
NO
Change Drum Ass'y
YES
Check video circuit.

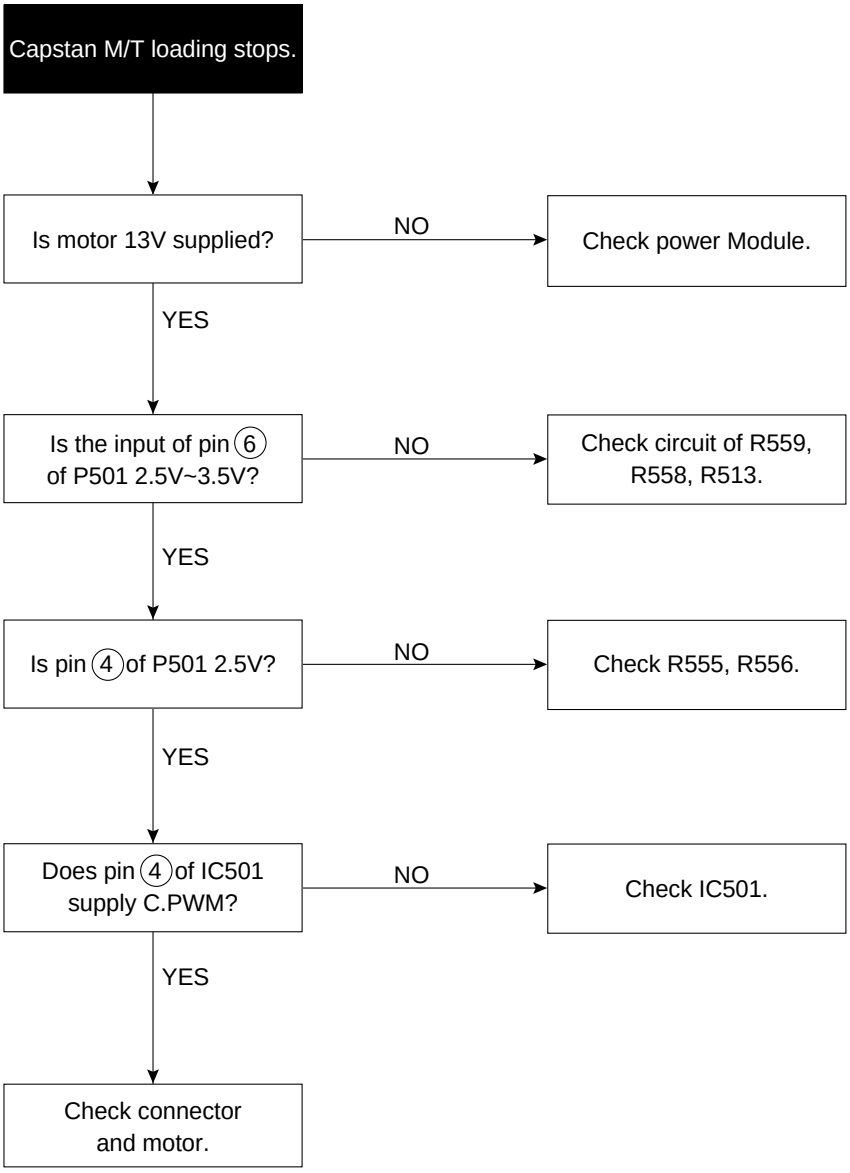
C.


Auto-stop during playback.
Is reel pulse applied to pin 5 and 6 of IC501?
NO
Check reel sensor.
YES
Is D. FG applied to pin 24 of IC501?
NO
Check connector and D. FG circuits.
YES
Check IC501.

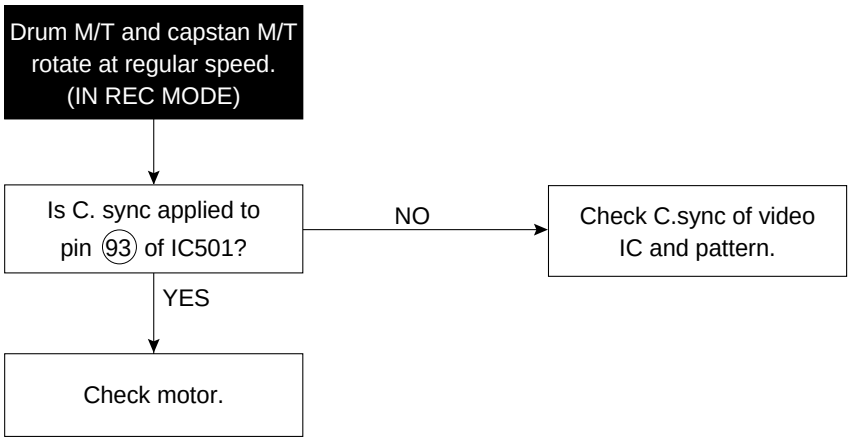
D.


Drum M/T loading stops.
Is motor 12V supplied to IC502 ⑦ ⑧ pin 12V?
NO
Check Q504
NO
Check power module.
YES
Is 6.2V supplied to Pin ④ of IC502?
NO
Check D504.
YES
Change IC502
NO
Check P503 and Loading motor.
YES
Check connector and motor.

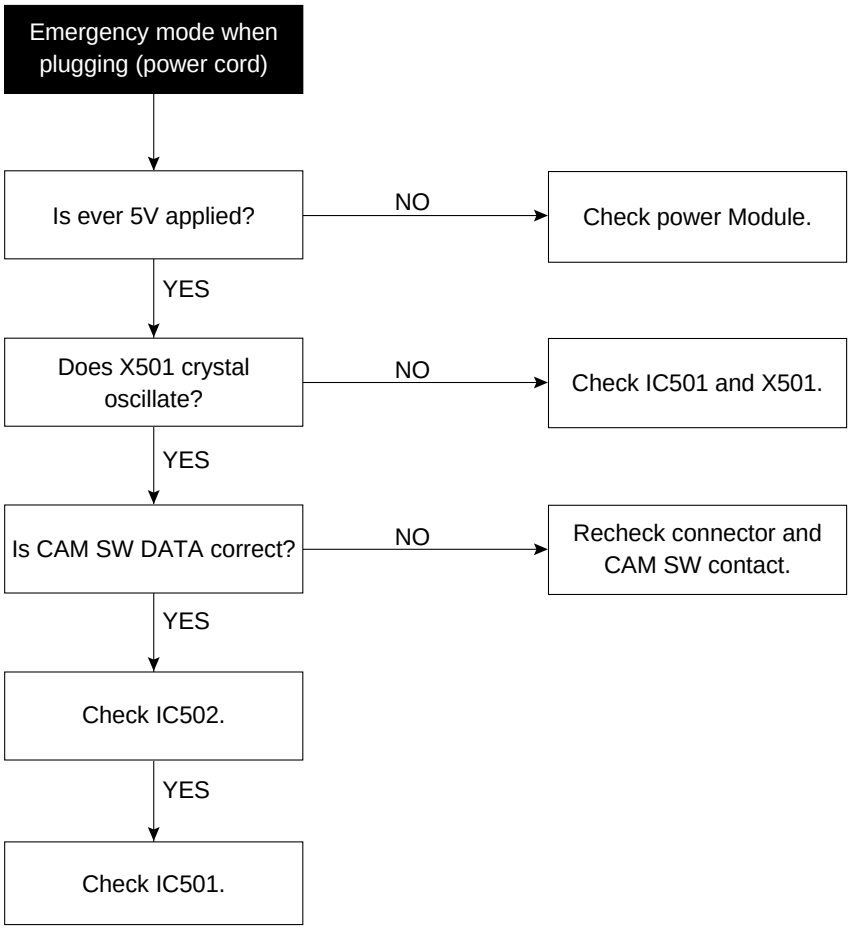
E.


Capstan M/T loading stops.
Is motor 13V supplied?
NO
Check power Module.
YES
Is the input of pin 6 of P501 2.5V~3.5V?
NO
Check circuit of R559, R558, R513.
YES
Is pin 4 of P501 2.5V?
NO
Check R555, R556.
YES
Does pin 4 of IC501 supply C.PWM?
NO
Check IC501.
YES
Check connector and motor.

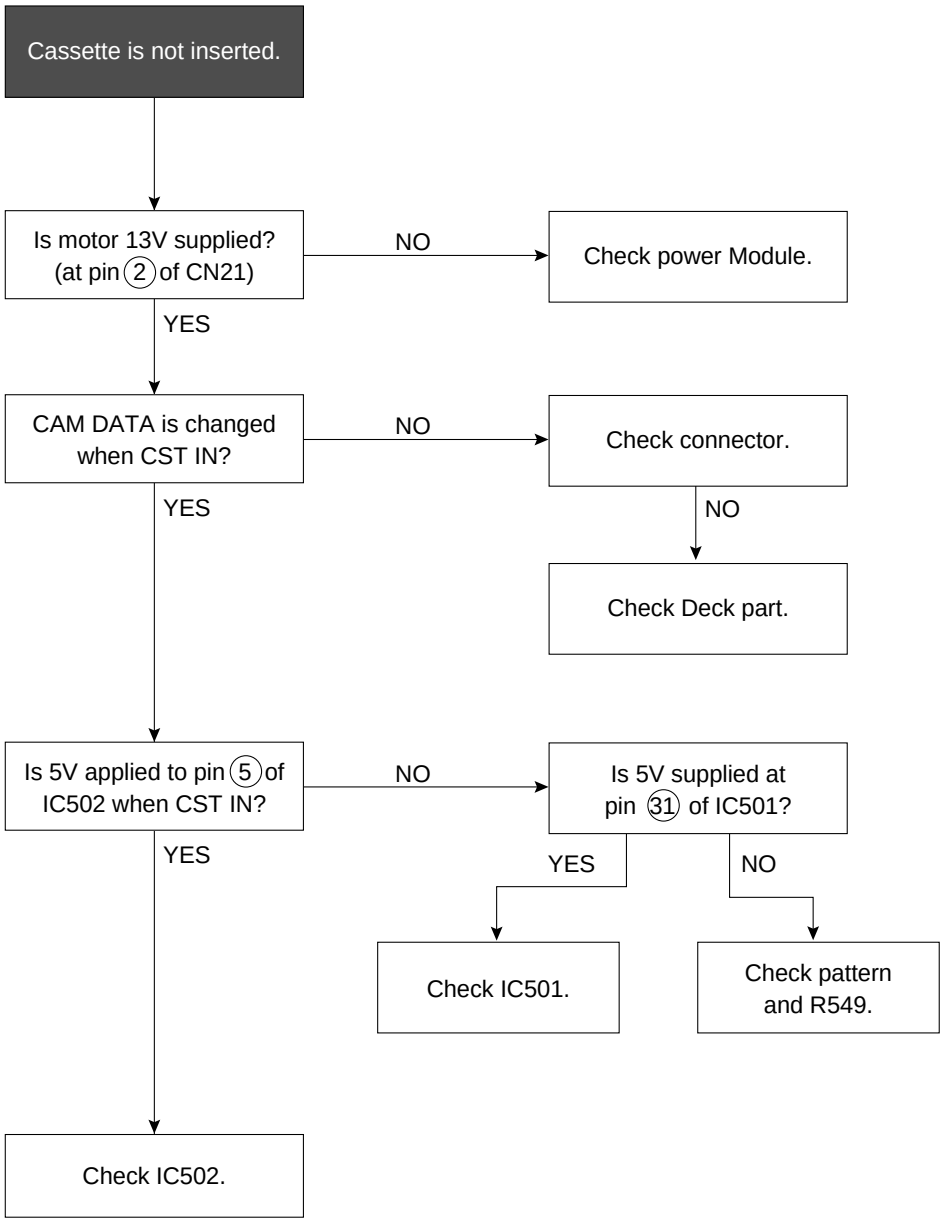
F.


Drum M/T and capstan M/T rotate at regular speed. (IN REC MODE)
Is C. sync applied to pin 93 of IC501?
NO
Check C.sync of video IC and pattern.
YES
Check motor.

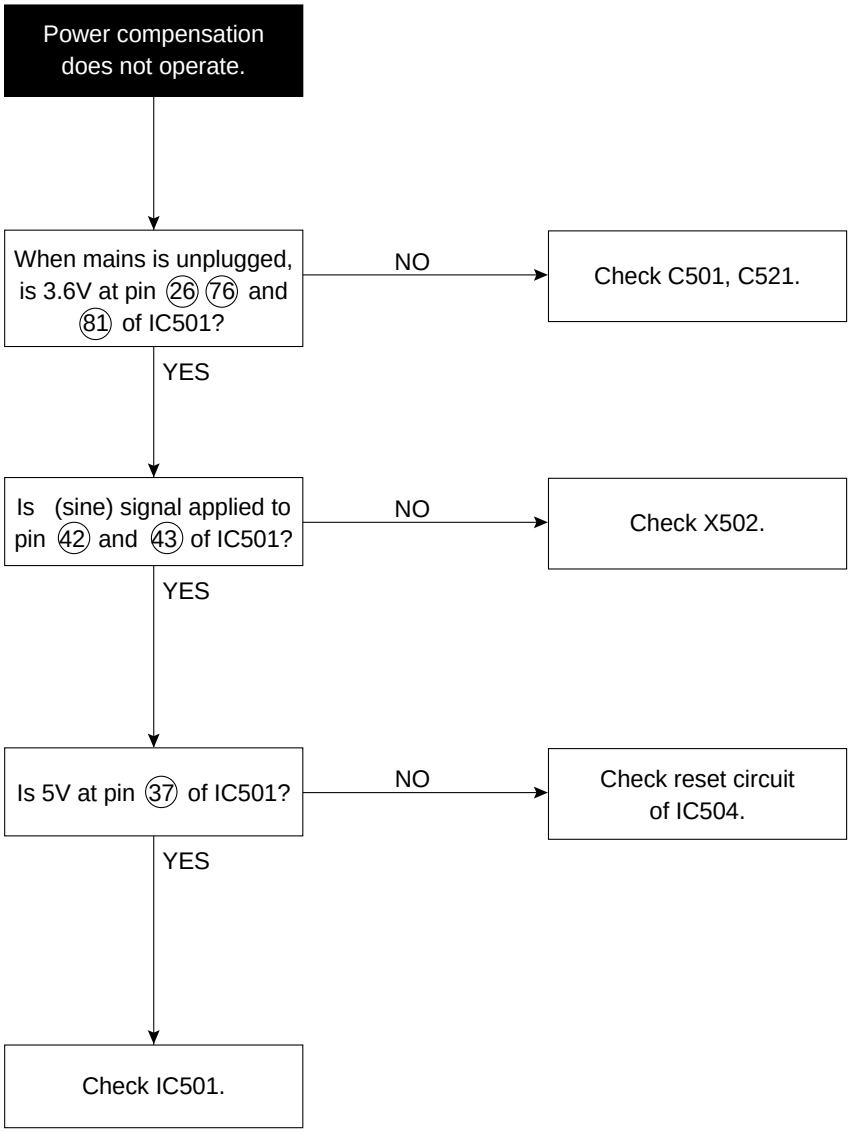
G.


Emergency mode when plugging (power cord)
Is ever 5V applied?
NO
Check power Module.
YES
Does X501 crystal oscillate?
NO
Check IC501 and X501.
YES
Is CAM SW DATA correct?
NO
Recheck connector and CAM SW contact.
YES
Check IC502.
YES
Check IC501.

H.

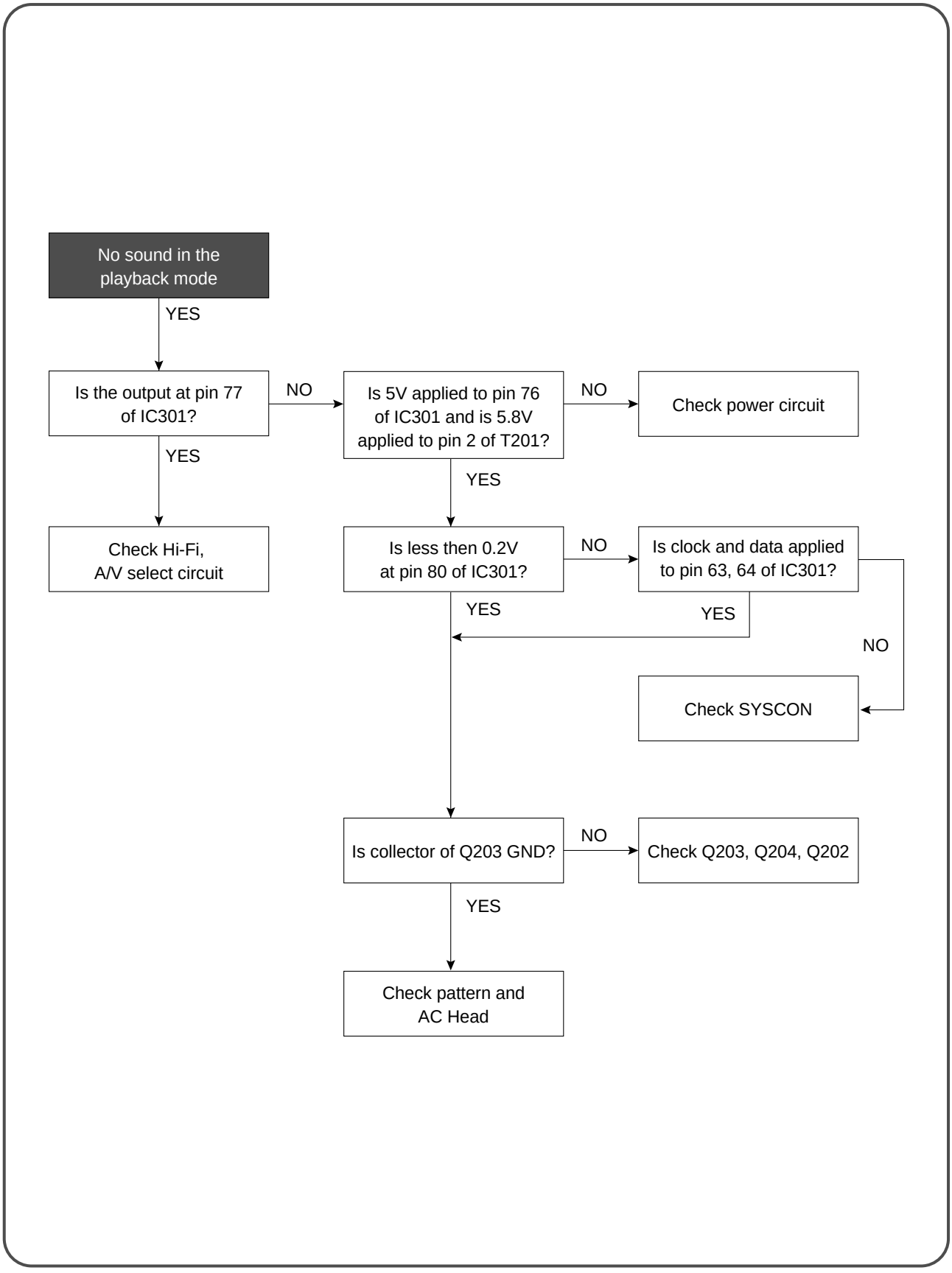

Cassette is not inserted.
Is motor 13V supplied? (at pin 2 of CN21)
NO
Check power Module.
YES
CAM DATA is changed when CST IN?
NO
Check connector.
NO
Check Deck part.
YES
Is 5V applied to pin 5 of IC502 when CST IN?
NO
Is 5V supplied at pin 31 of IC501?
YES
NO
YES
Check IC501.
Check pattern and R549.
Check IC502.

I.

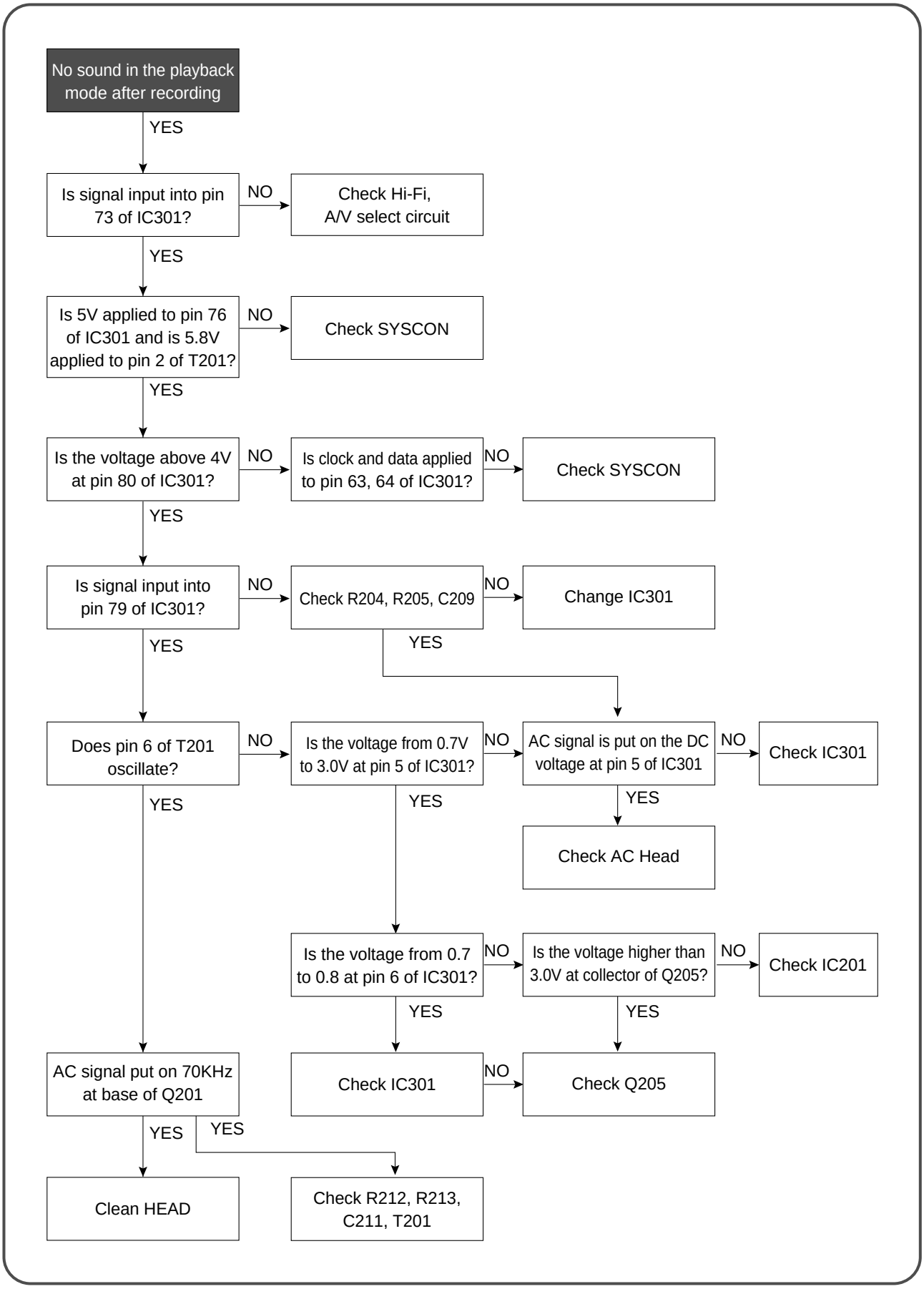

Power compensation does not operate.
When mains is unplugged, is 3.6V at pin 26 76 and 81 of IC501?
NO
Check C501, C521.
YES
Is (sine) signal applied to pin 42 and 43 of IC501?
NO
Check X502.
YES
Is 5V at pin 37 of IC501?
NO
Check reset circuit of IC504.
YES
Check IC501.

4-5. Audio Circuit (Normal)

A. TROUBLESHOOTING OF PB MODE.

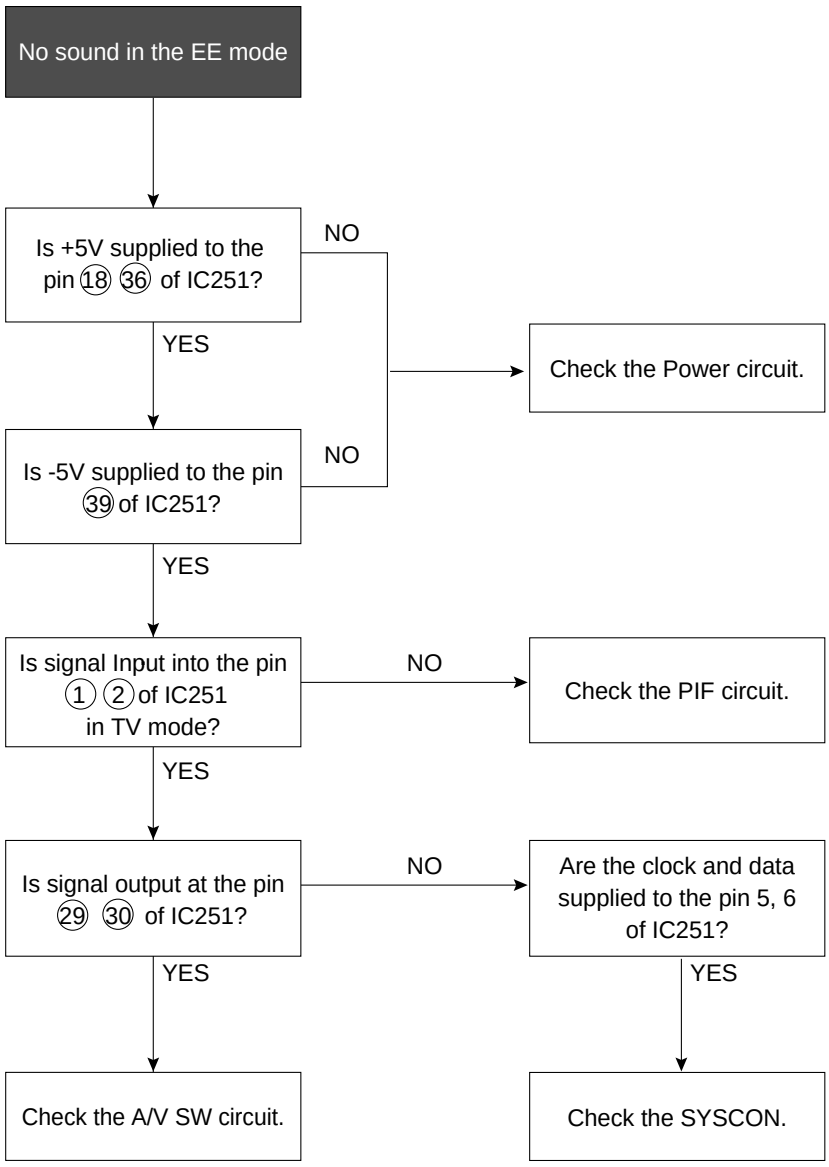


B. TROUBLESHOOTING OF REC MODE.

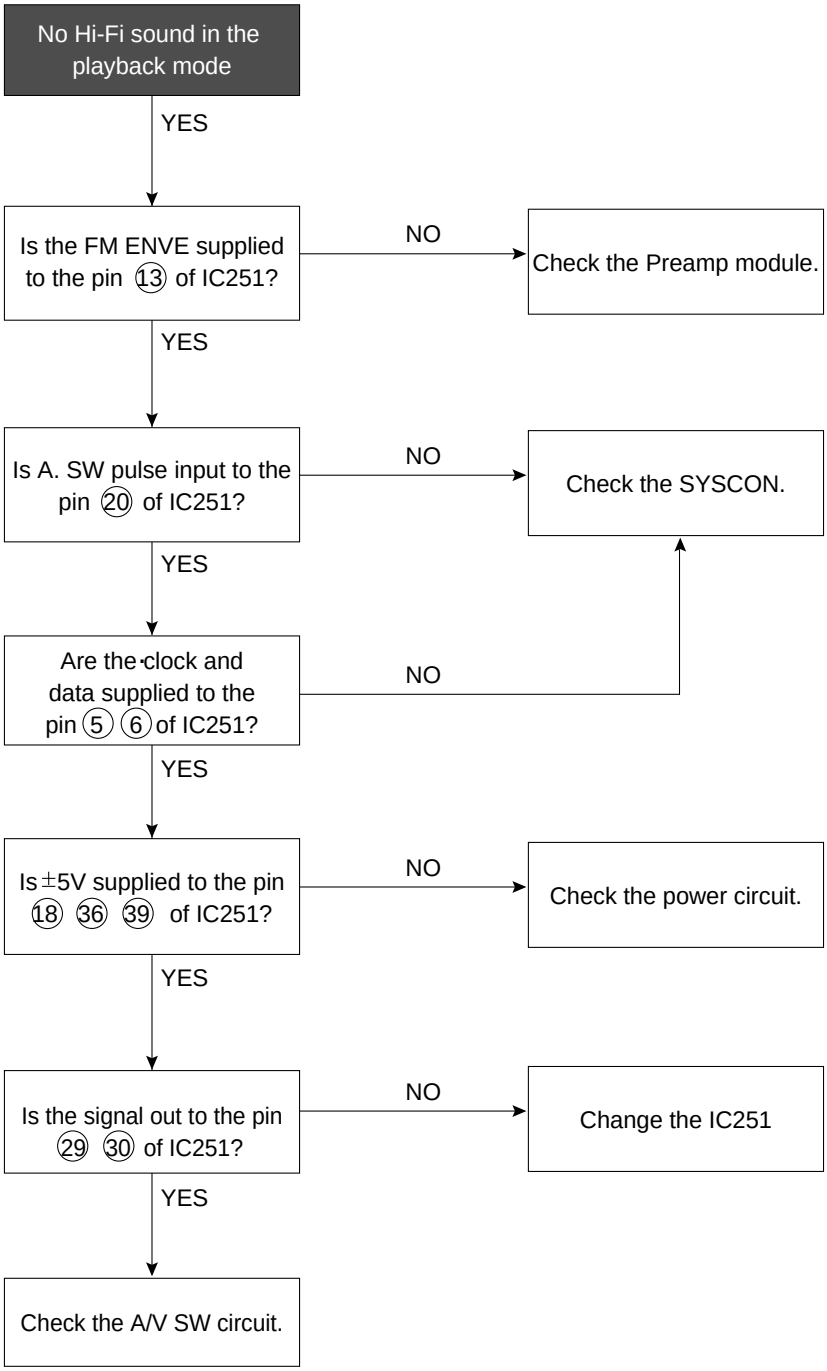


4-6. Audio Circuit (Hi-Fi)

A. TROUBLESHOOTING OF EE MODE.

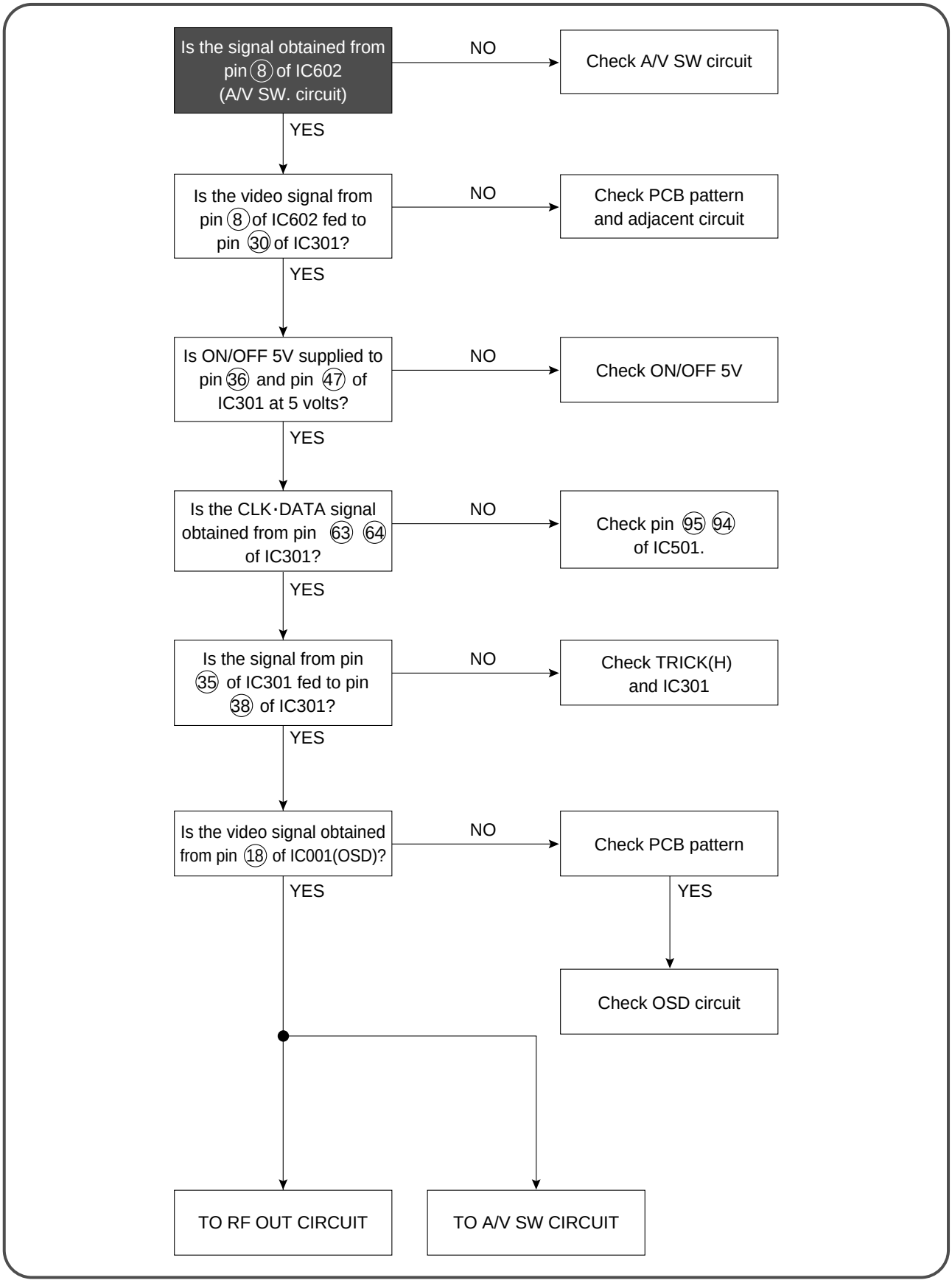

No sound in the EE mode
Is +5V supplied to the pin 18 36 of IC251?
NO
YES
Check the Power circuit.
Is -5V supplied to the pin 39 of IC251?
NO
YES
Is signal Input into the pin 1 2 of IC251 in TV mode?
NO
Check the PIF circuit.
YES
Is signal output at the pin 29 30 of IC251?
NO
Are the clock and data supplied to the pin 5, 6 of IC251?
YES
YES
Check the A/V SW circuit.
Check the SYSCON.

B. TROUBLESHOOTING OF Hi-Fi REC AND PB

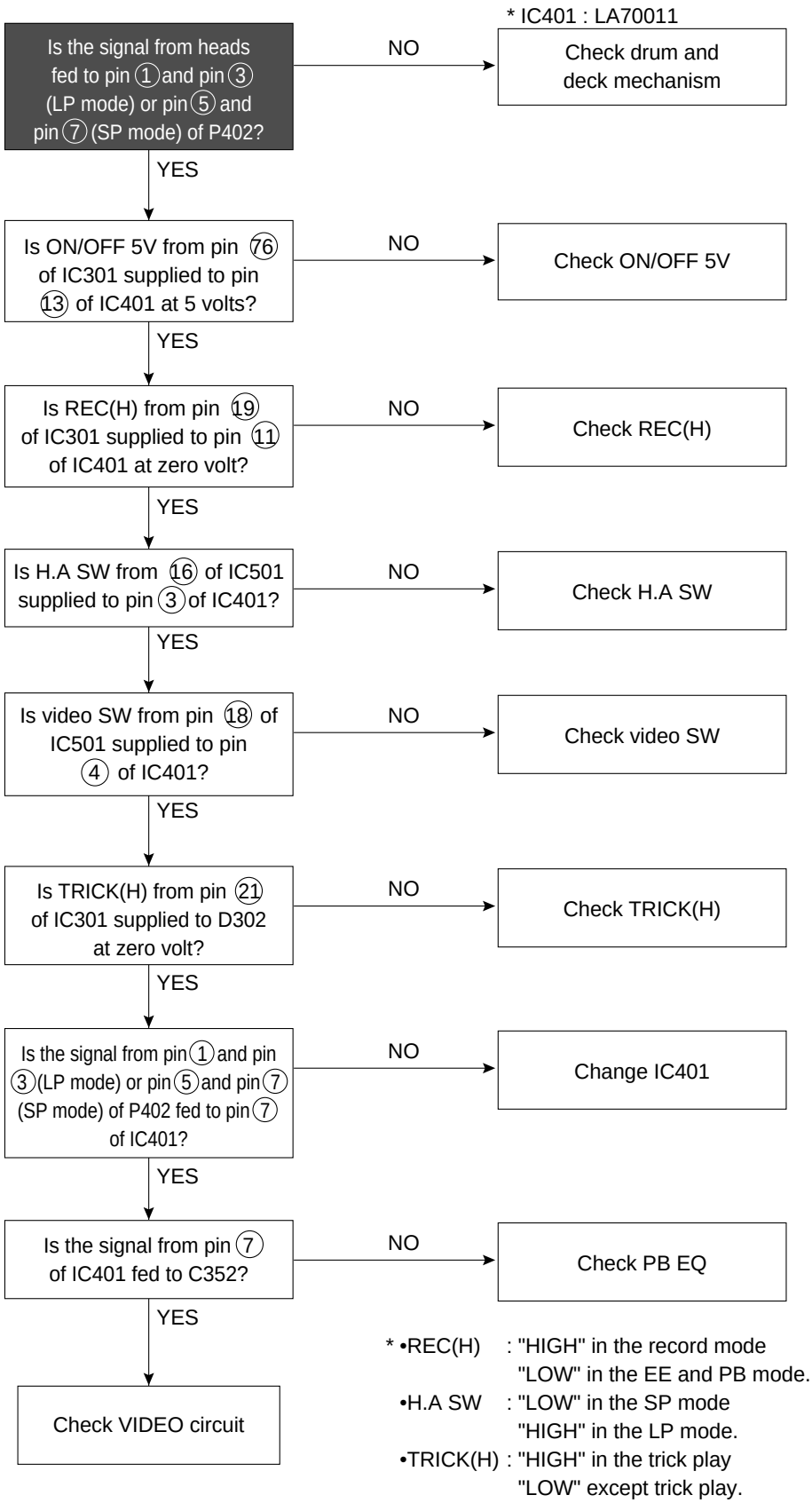

No Hi-Fi sound in the playback mode
YES
Is the FM ENVE supplied to the pin 13 of IC251?
NO
Check the Preamp module.
YES
Is A. SW pulse input to the pin 20 of IC251?
NO
Check the SYSCON.
YES
Are the clock and data supplied to the pin 5 6 of IC251?
NO
YES
Is ±5V supplied to the pin 18 36 39 of IC251?
NO
Check the power circuit.
YES
Is the signal out to the pin 29 30 of IC251?
NO
Change the IC251
YES
Check the A/V SW circuit.

4-7. Video Circuit

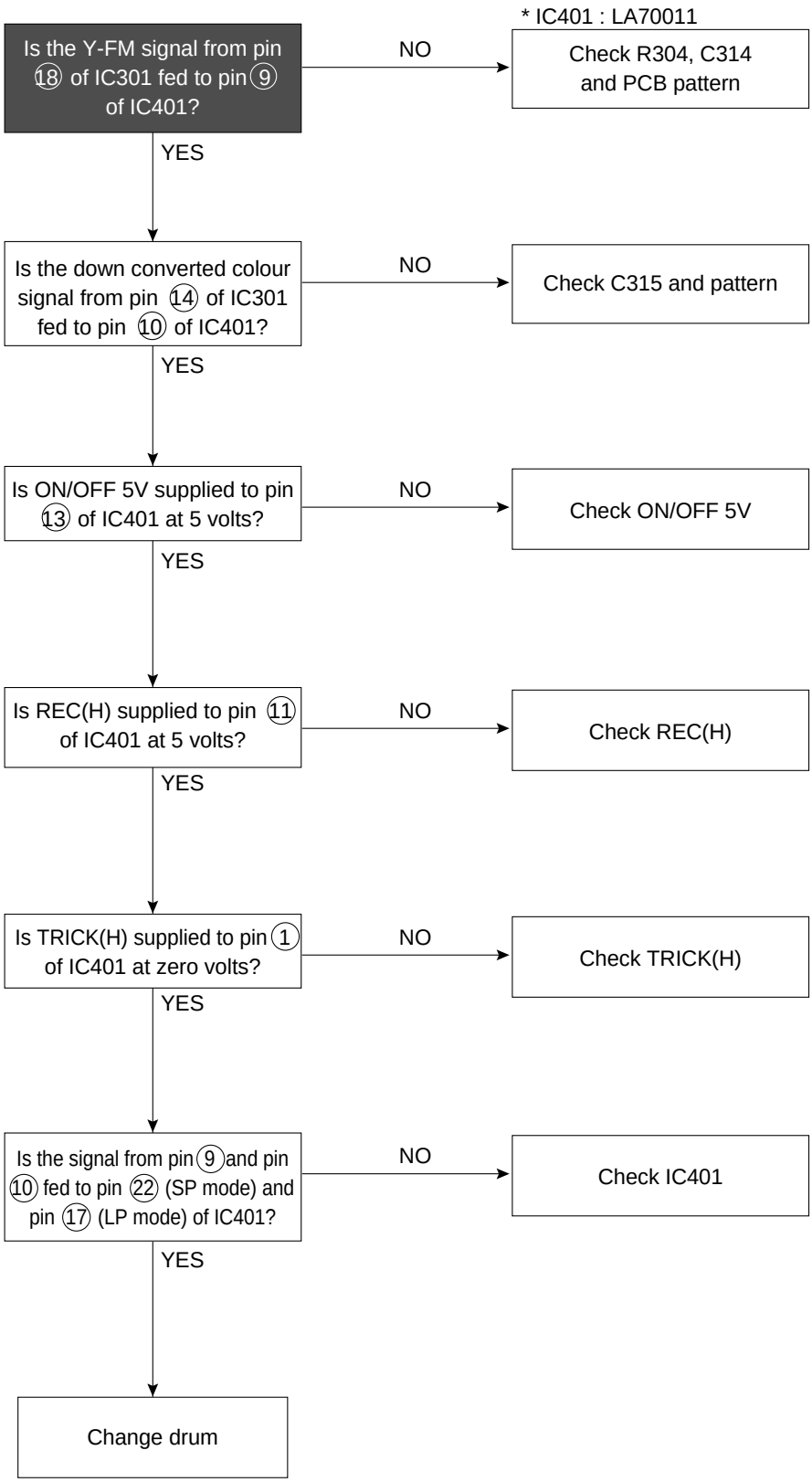
A. TROUBLESHOOTING OF EE MODE.


Is the signal obtained from pin ⑧ of IC602 (A/V SW. circuit)
NO
Check A/V SW circuit
YES
Is the video signal from pin ⑧ of IC602 fed to pin ㉚ of IC301?
NO
Check PCB pattern and adjacent circuit
YES
Is ON/OFF 5V supplied to pin ㊱ and pin ㊼ of IC301 at 5 volts?
NO
Check ON/OFF 5V
YES
Is the CLK·DATA signal obtained from pin ㊸ ㊹ of IC301?
NO
Check pin ㊺ ㊹ of IC501.
YES
Is the signal from pin ㉟ of IC301 fed to pin ㊳ of IC301?
NO
Check TRICK(H) and IC301
YES
Is the video signal obtained from pin ⑱ of IC001(OSD)?
NO
Check PCB pattern
YES
YES
Check OSD circuit
TO RF OUT CIRCUIT
TO A/V SW CIRCUIT

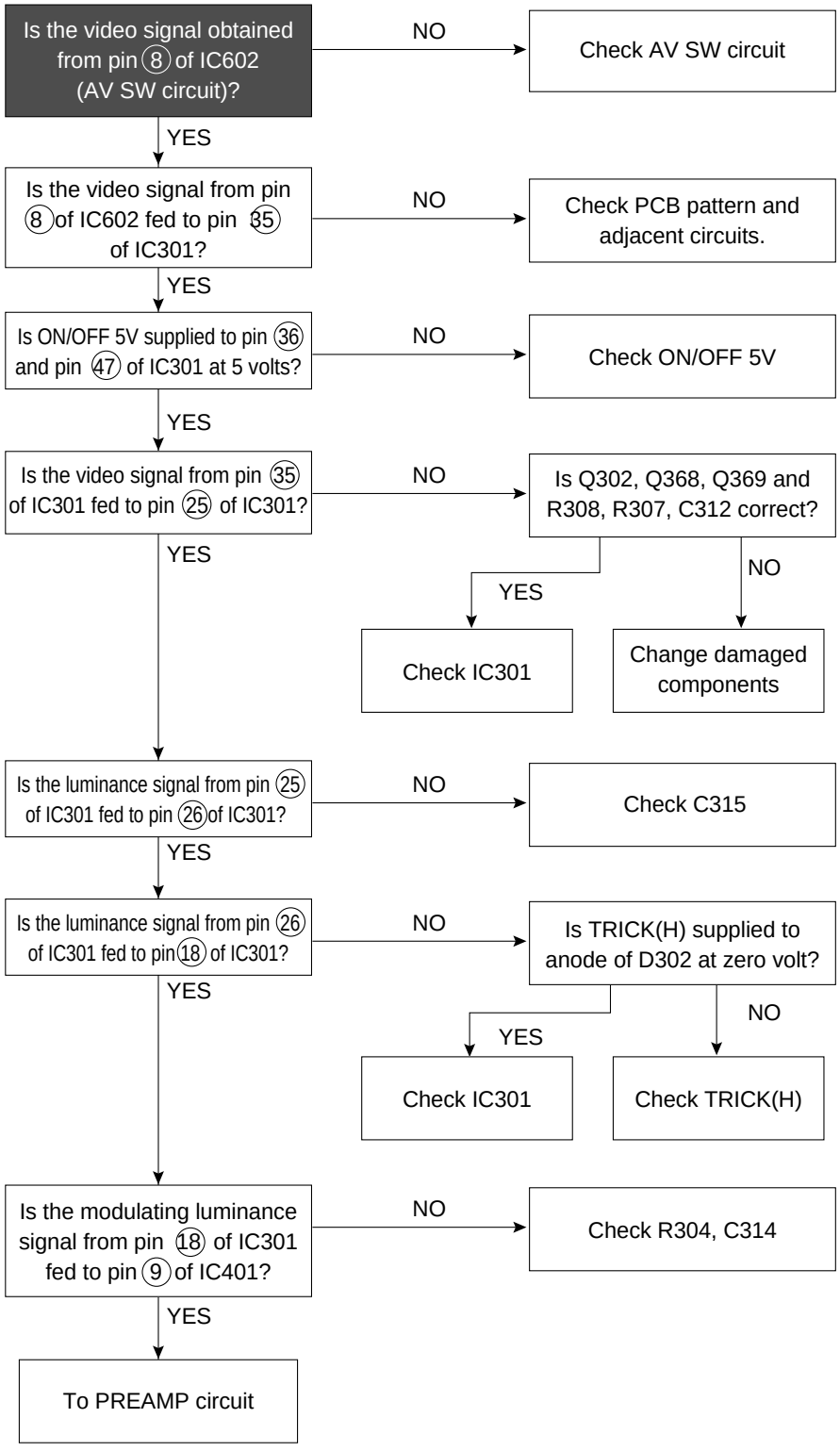
B. TROUBLESHOOTING OF PREAMP IN THE PLAYBACK MODE.


* IC401 : LA70011
Is the signal from heads fed to pin ① and pin ③ (LP mode) or pin ⑤ and pin ⑦ (SP mode) of P402?
NO
Check drum and deck mechanism
YES
Is ON/OFF 5V from pin ⑯ of IC301 supplied to pin ⑬ of IC401 at 5 volts?
NO
Check ON/OFF 5V
YES
Is REC(H) from pin ⑲ of IC301 supplied to pin ⑪ of IC401 at zero volt?
NO
Check REC(H)
YES
Is H.A SW from ⑯ of IC501 supplied to pin ③ of IC401?
NO
Check H.A SW
YES
Is video SW from pin ⑱ of IC501 supplied to pin ④ of IC401?
NO
Check video SW
YES
Is TRICK(H) from pin ㉑ of IC301 supplied to D302 at zero volt?
NO
Check TRICK(H)
YES
Is the signal from pin ① and pin ③ (LP mode) or pin ⑤ and pin ⑦ (SP mode) of P402 fed to pin ⑦ of IC401?
NO
Change IC401
YES
Is the signal from pin ⑦ of IC401 fed to C352?
NO
Check PB EQ
YES
Check VIDEO circuit
* •REC(H) : "HIGH" in the record mode
"LOW" in the EE and PB mode.
•H.A SW : "LOW" in the SP mode
"HIGH" in the LP mode.
•TRICK(H) : "HIGH" in the trick play
"LOW" except trick play.

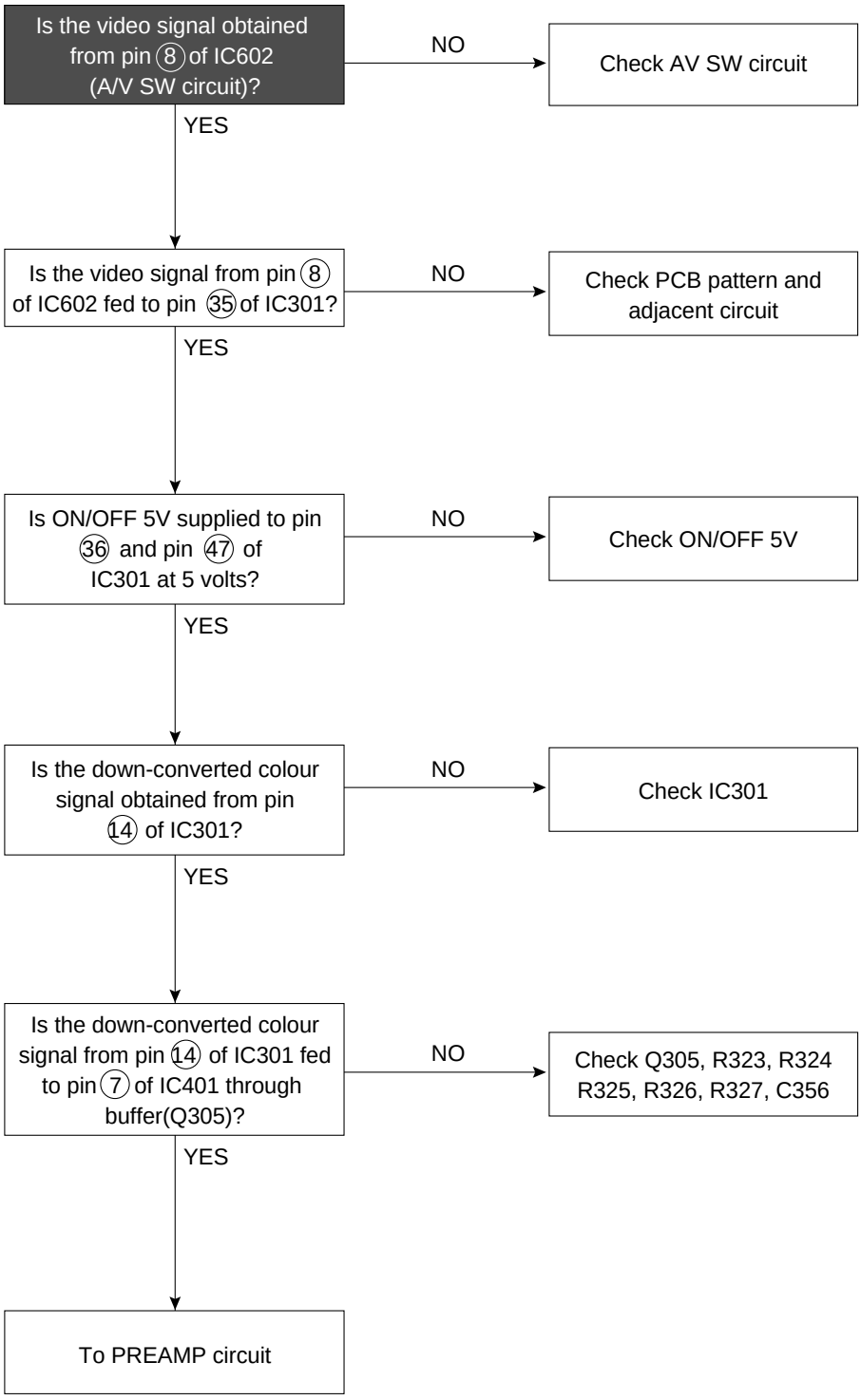
C. TROUBLESHOOTING OF PREAMP CIRCUIT IN THE RECORD MODE.


* IC401 : LA70011
Is the Y-FM signal from pin 18 of IC301 fed to pin 9 of IC401?
NO
Check R304, C314 and PCB pattern
YES
Is the down converted colour signal from pin 14 of IC301 fed to pin 10 of IC401?
NO
Check C315 and pattern
YES
Is ON/OFF 5V supplied to pin 13 of IC401 at 5 volts?
NO
Check ON/OFF 5V
YES
Is REC(H) supplied to pin 11 of IC401 at 5 volts?
NO
Check REC(H)
YES
Is TRICK(H) supplied to pin 1 of IC401 at zero volts?
NO
Check TRICK(H)
YES
Is the signal from pin 9 and pin 10 fed to pin 22 (SP mode) and pin 17 (LP mode) of IC401?
NO
Check IC401
YES
Change drum

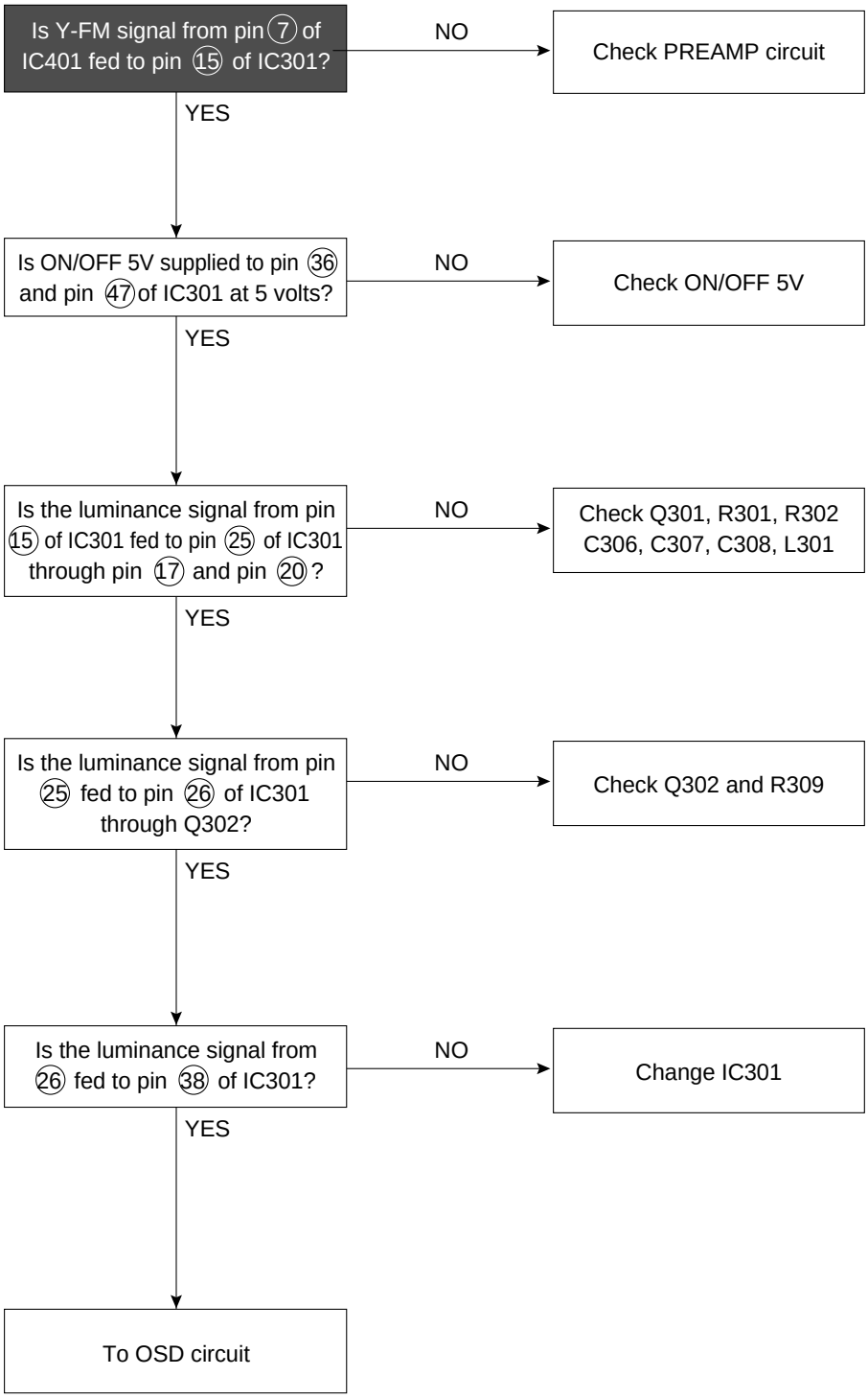
D. TROUBLESHOOTING OF LUMINANCE SIGNAL IN THE RECORD MODE.


Is the video signal obtained from pin ⑧ of IC602 (AV SW circuit)?
NO
Check AV SW circuit
YES
Is the video signal from pin ⑧ of IC602 fed to pin ㉟ of IC301?
NO
Check PCB pattern and adjacent circuits.
YES
Is ON/OFF 5V supplied to pin ㊱ and pin ㊼ of IC301 at 5 volts?
NO
Check ON/OFF 5V
YES
Is the video signal from pin ㉟ of IC301 fed to pin ㉕ of IC301?
NO
Is Q302, Q368, Q369 and R308, R307, C312 correct?
YES
NO
Check IC301
Change damaged components
YES
Is the luminance signal from pin ㉕ of IC301 fed to pin ㉖ of IC301?
NO
Check C315
YES
Is the luminance signal from pin ㉖ of IC301 fed to pin ⑱ of IC301?
NO
Is TRICK(H) supplied to anode of D302 at zero volt?
YES
NO
Check IC301
Check TRICK(H)
YES
Is the modulating luminance signal from pin ⑱ of IC301 fed to pin ⑨ of IC401?
NO
Check R304, C314
YES
To PREAMP circuit

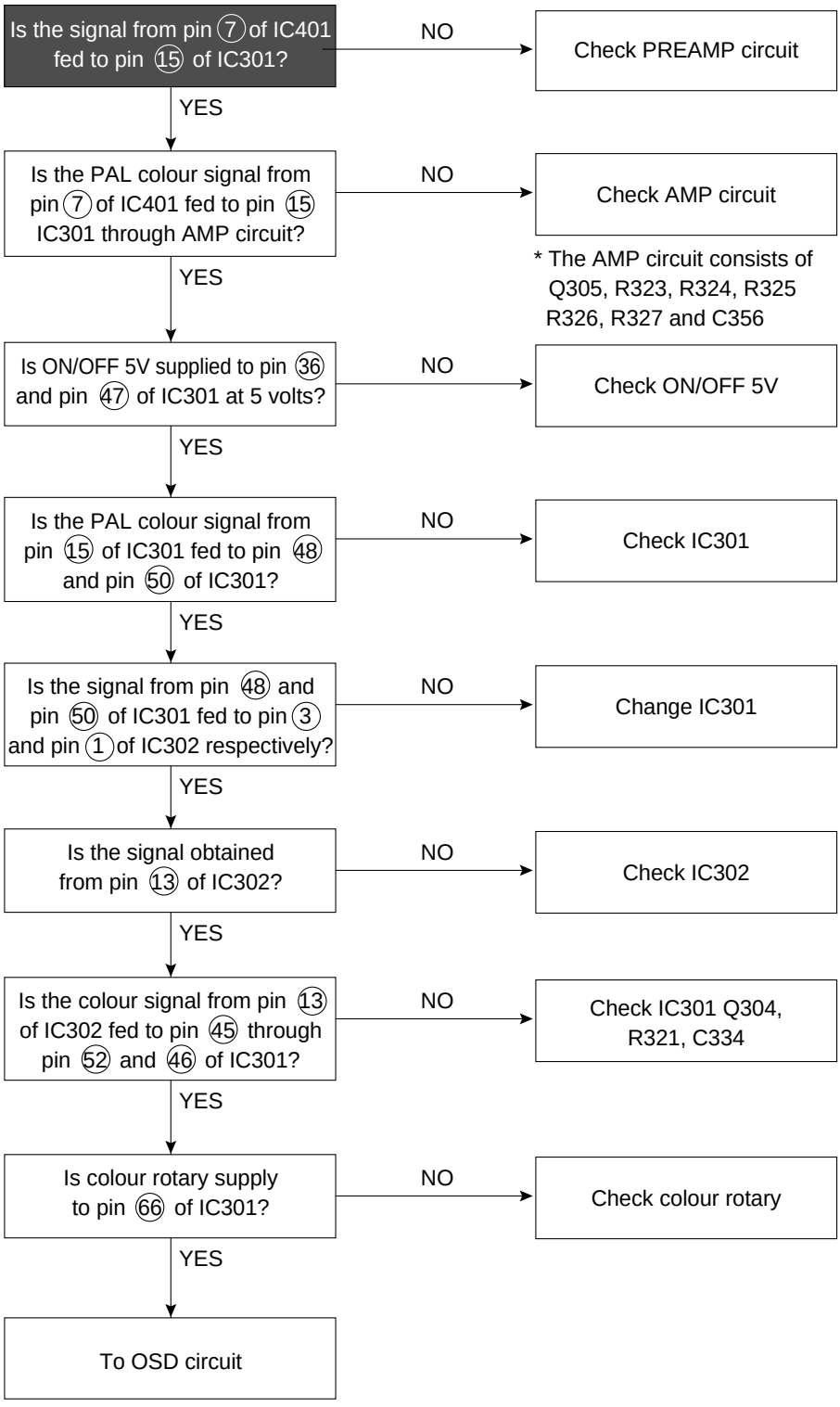
E. TROUBLESHOOTING OF PAL COLOUR IN THE RECORD MODE.


Is the video signal obtained from pin (8) of IC602 (A/V SW circuit)?
NO
Check AV SW circuit
YES
Is the video signal from pin (8) of IC602 fed to pin (35) of IC301?
NO
Check PCB pattern and adjacent circuit
YES
Is ON/OFF 5V supplied to pin (36) and pin (47) of IC301 at 5 volts?
NO
Check ON/OFF 5V
YES
Is the down-converted colour signal obtained from pin (14) of IC301?
NO
Check IC301
YES
Is the down-converted colour signal from pin (14) of IC301 fed to pin (7) of IC401 through buffer(Q305)?
NO
Check Q305, R323, R324 R325, R326, R327, C356
YES
To PREAMP circuit

F. TROUBLESHOOTING OF LUMINANCE IN THE PLAYBACK MODE.

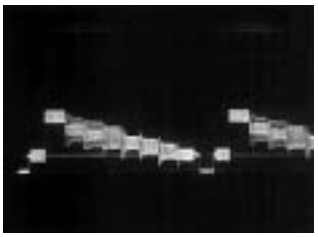

Is Y-FM signal from pin (7) of IC401 fed to pin (15) of IC301?
NO
Check PREAMP circuit
YES
Is ON/OFF 5V supplied to pin (36) and pin (47) of IC301 at 5 volts?
NO
Check ON/OFF 5V
YES
Is the luminance signal from pin (15) of IC301 fed to pin (25) of IC301 through pin (17) and pin (20) ?
NO
Check Q301, R301, R302 C306, C307, C308, L301
YES
Is the luminance signal from pin (25) fed to pin (26) of IC301 through Q302?
NO
Check Q302 and R309
YES
Is the luminance signal from (26) fed to pin (38) of IC301?
NO
Change IC301
YES
To OSD circuit

G. TROUBLESHOOTING OF PAL COLOUR IN THE PLAYBACK MODE.

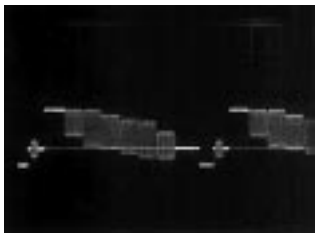

Is the signal from pin (7) of IC401 fed to pin (15) of IC301?
NO
Check PREAMP circuit
YES
Is the PAL colour signal from pin (7) of IC401 fed to pin (15) IC301 through AMP circuit?
NO
Check AMP circuit
* The AMP circuit consists of Q305, R323, R324, R325 R326, R327 and C356
YES
Is ON/OFF 5V supplied to pin (36) and pin (47) of IC301 at 5 volts?
NO
Check ON/OFF 5V
YES
Is the PAL colour signal from pin (15) of IC301 fed to pin (48) and pin (50) of IC301?
NO
Check IC301
YES
Is the signal from pin (48) and pin (50) of IC301 fed to pin (3) and pin (1) of IC302 respectively?
NO
Change IC301
YES
Is the signal obtained from pin (13) of IC302?
NO
Check IC302
YES
Is the colour signal from pin (13) of IC302 fed to pin (45) through pin (52) and (46) of IC301?
NO
Check IC301 Q304, R321, C334
YES
Is colour rotary supply to pin (66) of IC301?
NO
Check colour rotary
YES
To OSD circuit

SECTION 5. WAVEFORMS ON VIDEO CIRCUIT

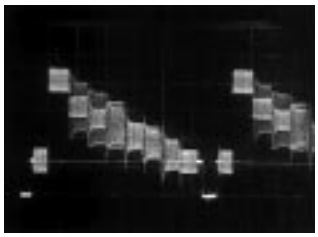
5-1. Waveforms in The EE Mode (Color bar input)



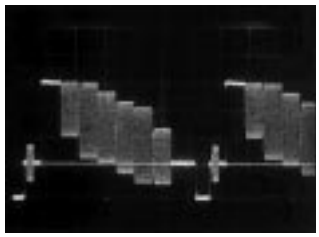
① Pin 30 of IC301
(SECAM color bar input :
1.0Vp-p)



② Pin 30 of IC301
(PAL color bar input :
1.0Vp-p)

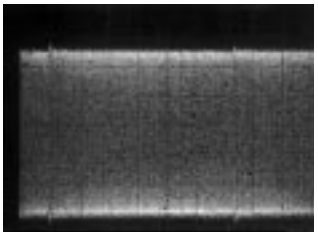


③ Pin 38 of IC301
(SECAM color bar output :
2.0Vp-p)

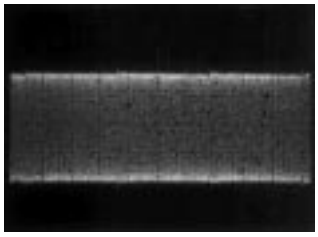


④ Pin 38 of IC301
(PAL color bar output :
2.0Vp-p)

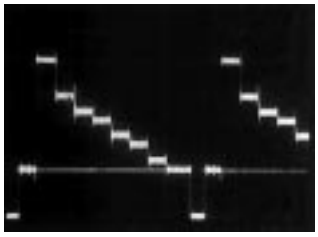
5-2. Waveforms of The Luminance in The Record Mode (Color bar input)



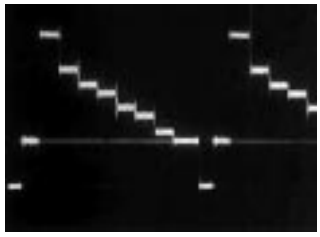
⑤ Pin 18 of IC301(PAL)
(REC luminance :
300mVp-p)



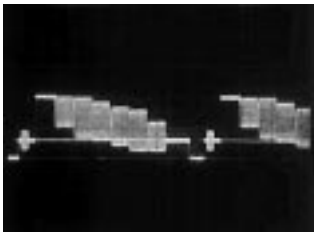
⑥ Pin 18 of IC301(SECAM)
(REC luminance :
300mVp-p)



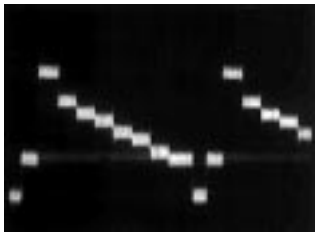
⑦ Pin 25 of IC301
(0.5Vp-p)



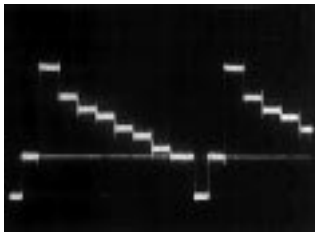
⑧ Pin 26 of IC301
(0.5Vp-p)



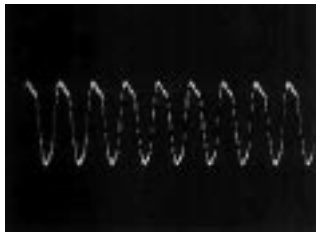
⑨ Pin 35 of IC301
(Color bar input :
1.0Vp-p)



⑩ Pin 40 of IC301
(0.4Vp-p)

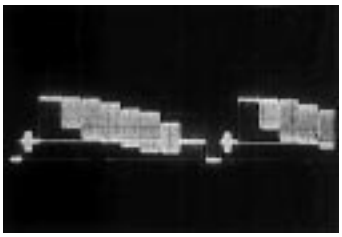


⑪ Pin 42 of IC301
(0.4Vp-p)

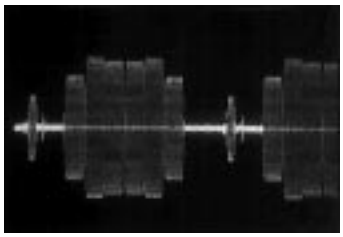


⑫ Pin 10 of IC302
(fsc=4.433619MHz :
350mVp-p)

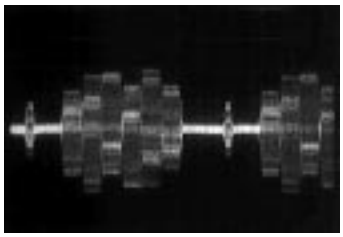
5-3. Waveforms of the PAL Color in the Record Mode (Color bar input)



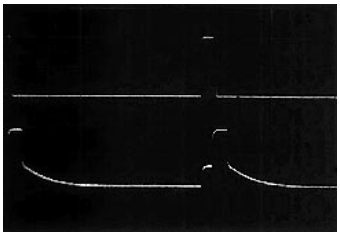
⑬ Pin 35 of IC301
(PAL color input :
1.0Vp-p)



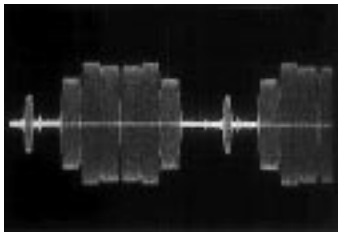
⑭ Pin 48 and 50 of IC301
(300mVp-p)



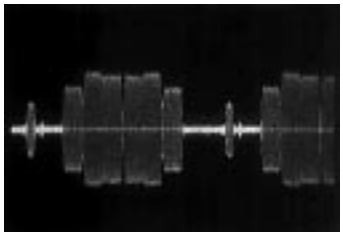
⑮ Pin 52 of IC301
(400mVp-p)



⑯ Pin 37 of IC301
(C.SYNC : 2Vp-p)

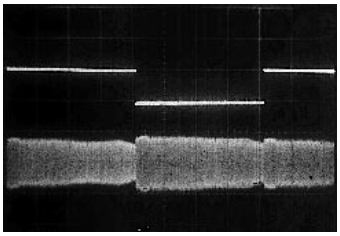


⑰ Pin 14 of IC301
(300mVp-p)

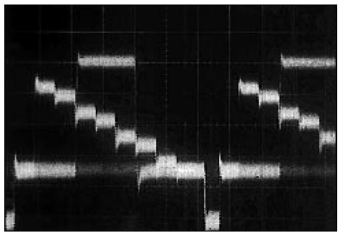


⑱ Pin 10 of IC401
(REC PAL color :
300mVp-p)

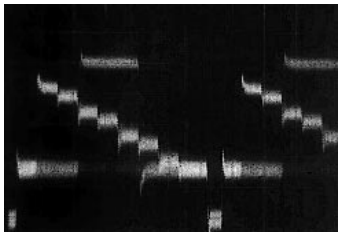
5-4. Waveforms of the Luminance in the PB Mode (DP-1 test tape)



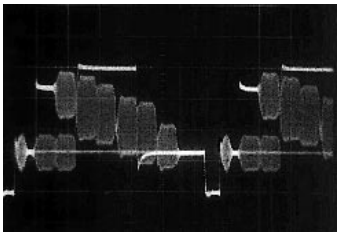
㉔ UP : Pin 66 of IC301(color
rotary : 1Vp-p)
DOWN : Pin 20 of IC301
(ENVE : 0.5Vp-p)



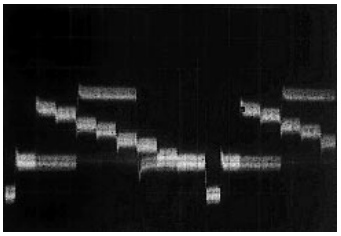
㉕ Pin 25 of IC301
(0.5Vp-p)



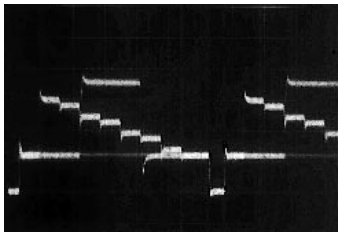
㉖ Pin 26 of IC301
(0.5Vp-p)



㉗ Pin 38 of IC301
(Video out : 2.0Vp-p)

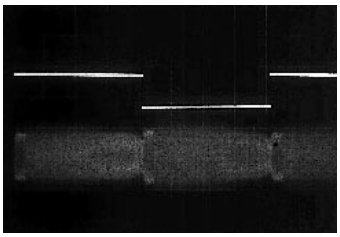


㉘ Pin 40 of IC301
(400mVp-p)

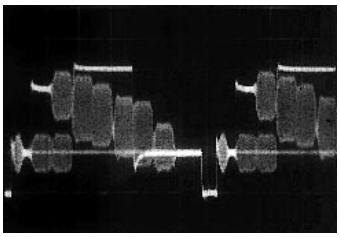


㉙ Pin 42 of IC301
(300mVp-p)

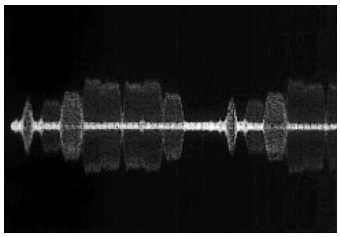
5-5. Waveforms of the PAL Color in the PB Mode (DP-1 test tape)



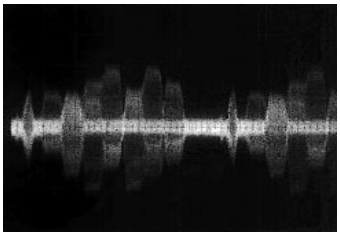
㉚ UP : Pin 66 of IC301(color rotary : 0.5Vp-p)
DOWN : Pin 20 of IC301
(500mVp-p)



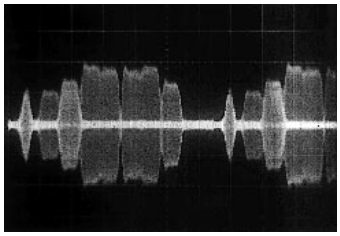
㉛ Pin 37 of IC301
(Video out : 2.0Vp-p)



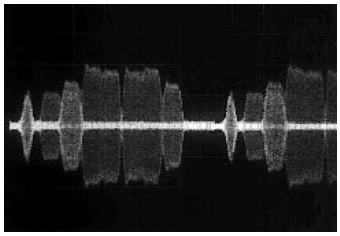
㉜ Pin 48 and 50 of IC301
(240mVp-p)



㉝ Pin 52 of IC301
(300mVp-p)



㉞ Pin 45 of IC301
(500mVp-p)



㉟ Pin 46 of IC301
(500mVp-p)

SECTION 6. μ-COM PORT

IC 501 (FOR U.K. & S/IRELAND:168KK8YKTS, FOR OTHERS:168KK8X8TS)

* P : Pulse H : High L : Low

No.	NAME	I/O	ASSIGNMENT	ACTIVE	CN
1	IF ON (H)	O	RF MODE 'H' OUTPUT OTHERWISE 'L' OUTPUT	H	PIF
2	AUDIO MUTE(H)	O	AUDIO MUTE H OUTPUT	H	VIDEO
3	D. PWM	O	DRUM MOTOR CONTROL PWM OUTPUT	P	DECK(DRUM)
4	C. PWM	O	CAPSTAN MOTOR CONTROL PWM OUTPUT	P	DECK(CAP)
5	T REEL	I	TAKE-UP REEL PULSE INPUT	P	DECK(REEL)
6	S REEL	I	SUPPLY REEL PULSE INPUT	P	DECK(REEL)
7	MESECAM(H)	I	MESCECAM MODE INPUT	H	VIDEO
8	V/SC DATA	O	VIDEO SECAM SERIAL DATA OUTPUT (I^2C BUS)	SERIAL	VIDEO
9	V/SC CLK	O	VIDEO SECAM SERIAL CLK OUTPUT (I^2C BUS)	SERIAL	VIDEO
10	Hi-Fi DET(H)	I	Hi-Fi DET. DATA INPUT	H	Hi-Fi
11	REMOCON IN	I	REMOCON DATA INPUT	P	REMOCON RECEIVER
12	A.SW	O	Hi-Fi A.SWP OUTPUT	P	Hi-Fi
13	NC				
14	Q V SYNC	O	PINOUT THIS SIGNAL DURING 'TRICK' MODES	PULSE/L	VIDEO
15	C. ROTARY	O	2HD : $\overline{\text{SW PULSE}}$ 4HD : EXCLUSIVE OR OUTPUT OF HEAD AMP SW & V. SW PULSE	P	VODEO
16	HEAD AMP SW	O	TO SELECT SP H'D OR LP H'D SP H'D : L LP H'D : H • 4HD PLAY: SP L, LP H; CUE/REV: SP L/H, LP L/H	P	VIDEO
17	ENVE COMP	I	COMPARE SP ENVE WITH SP ENVE SP L LP : H	P	VIDEO
18	V. SW	O	TO SELECT R/L CHANNEL (VIDEO H'D)	P	VIDEO
19	AV1	O	A/V INPUT SELECTOR OUTPUT	H/L	A/V SW
20	SLOW STEP CONTROL	O	CONTROL SIGNAL TO PROTECT AGAINST ABNORMAL ACTION DURING SLOW MODE	P	CTL AMP
21	REC CTL	O	CTL PULSE OUT IN REC MODE	P	DECK(CTL)
22	CAP FG	I	CAPSTAN FG INPUT	P	DECK(CAP)
23	DRUM PG	I	DRUM PG INPUT	P	DECK(DRUM)
24	DRUM FG	I	DRUM FG INPUT	P	DECK(DRUM)
25	PB CTL	I	CTL PULSE INPUT	P	CTL AMP
26	VCC		BACK UP 5V		

<table>
<tr><th>No.</th><th>NAME</th><th>I/O</th><th>ASSIGNMENT</th><th>ACTIVE</th><th>CN</th></tr>
<tr><td>27</td><td>TV CONTROL</td><td>O</td><td>TV/VCR MODE SWITCHING ON TV
TV MODE : L, VCR MODE : H
ACTIVE IN DIGITRON</td><td>L</td><td>A/V SW</td></tr>
<tr><td>28</td><td>CANAL + (L)</td><td>I</td><td>LOW INPUT IN CANAL BROADCAST</td><td>L</td><td>A/V SW</td></tr>
<tr><td>29</td><td>AV2</td><td>O</td><td>A/V INPUT SELECTOR OUTPUT</td><td>H/L</td><td>A/V SW</td></tr>
<tr><td>30
31</td><td>L/M R
L/M F</td><td>O
O</td><td><table><tr><th></th><th>LM F</th><th>LM R</th><th>OUTPUT</th></tr><tr><td>LOADING MOTOR</td><td>H</td><td>L</td><td>FORWARD</td></tr><tr><td>REVERSE DRIVING</td><td>L</td><td>H</td><td>REVERSE</td></tr><tr><td>LOADING MOTOR</td><td>H</td><td>H</td><td rowspan="2">BRAKE</td></tr><tr><td>FORWARD DRIVING</td><td>L</td><td>L</td></tr></table></td><td>L/H</td><td>L/M IC</td></tr>
<tr><td>32
33
34
44</td><td>P42/ØOUT
P41
P41
P32</td><td></td><td>CAM DATA INPUT
* MODE SWITCHING TABLE<table><tr><th>CAM A</th><th>CAM B</th><th>CAM C</th><th>CAM D</th><th>MODE</th></tr><tr><td>L</td><td>H</td><td>H</td><td>H</td><td>EJECT</td></tr><tr><td>L</td><td>H</td><td>L</td><td>H</td><td>STAND BY</td></tr><tr><td>H</td><td>H</td><td>L</td><td>H</td><td>REV</td></tr><tr><td>H</td><td>H</td><td>L</td><td>L</td><td>STOP</td></tr><tr><td>H</td><td>H</td><td>H</td><td>L</td><td>PLAY</td></tr><tr><td>H</td><td>L</td><td>L</td><td>L</td><td>SLOW</td></tr><tr><td>H</td><td>L</td><td>H</td><td>H</td><td>BRAKE</td></tr><tr><td>H</td><td>L</td><td>H</td><td>L</td><td>FF/REW</td></tr><tr><td>H</td><td>H</td><td>H</td><td>H</td><td>CAM OFF</td></tr></table></td><td>L</td><td>DECK(CAM)</td></tr>
<tr><td>35</td><td>NUB</td><td></td><td>GND</td><td></td><td></td></tr>
<tr><td>36</td><td>NUA</td><td></td><td>GND</td><td></td><td></td></tr>
<tr><td>37</td><td>RESET(L)</td><td>I</td><td>RESET INPUT</td><td>L</td><td></td></tr>
<tr><td>38</td><td>XIN</td><td>I</td><td>16MHz OSC IN</td><td></td><td></td></tr>
<tr><td>39</td><td>XOUT</td><td>O</td><td>16MHz OSC OUT</td><td></td><td></td></tr>
<tr><td>40</td><td>CLK SEL</td><td>I</td><td>AFTER RESET, A SYSTEM CLOCK IS SELECTED
DEPENDING UPON CURRENT STATE :
IF L : 32.768KHz
H : 16MHz IS SELECTED</td><td>L/H</td><td></td></tr>
<tr><td>41</td><td>VSS</td><td></td><td>GND</td><td></td><td></td></tr>
<tr><td>42</td><td>XCIN</td><td>I</td><td>32.768KHz OSC IN</td><td></td><td></td></tr>
<tr><td>43</td><td>XCOUT</td><td>O</td><td>32.768KHz OSC OUT</td><td></td><td></td></tr>
<tr><td>44</td><td>CAM D</td><td>I</td><td>SEE THE PRECEDING PAGE</td><td>L</td><td>DECK(CAM)</td></tr>
<tr><td>45</td><td>NC</td><td></td><td></td><td></td><td></td></tr>
<tr><td>46</td><td>CAP I LIMIT</td><td>O</td><td>THIS PORT IS USUALLY OPEN BUT OUTPUTS
THE CAPSTAN STOP STATE OF FRAME ADVANCE</td><td>L</td><td>DECK
(CAPSTAN)</td></tr>
<tr><td>47</td><td>CAP
F(L) / R(H)</td><td>O</td><td>CAPSTAN MOTOR FORWARD(L) / REVERSE(H)</td><td>L/H</td><td>DECK
(CAPSTAN)</td></tr>
<tr><td>48</td><td>POWER ON (L)</td><td>O</td><td>POWER ON/OFF CONTROL PORT</td><td>L/H</td><td>POWER</td></tr>
</table>

No.	NAME	I/O	ASSIGNMENT	ACTIVE	CN
49	KEY IN1	I	KEY & OPTION DATA INPUT	P	
50	KEY IN2	I	KEY & OPTION DATA INPUT	P	
51	S0	O	SEGMENT 0		
52	S1	O	SEGMENT 1		
53	S2	O	SEGMENT 2		
54	S3	O	SEGMENT 3		
55	S4	O	SEGMENT 4		
56	S5	O	SEGMENT 5		
57	S6	O	SEGMENT 6		
58	S7	O	SEGMENT 7		
59	S8	O	SEGMENT 8		
60	S9	O	SEGMENT 9		
61	S10	0	SEGMENT 10		
62	S10	0	SEGMENT 10		
63	S10	0	SEGMENT 10		
64	S10	0	SEGMENT 10		
65	S10	0	SEGMENT 10		
66	S10	0	SEGMENT 10		
67	G0	O	GRID 0		
68	G0	O	GRID 0		
69	G0	O	GRID 0		
70	G0	O	GRID 0		
71	G0	O	GRID 0		
72	G0	O	GRID 0		
73	AV4	O	A/V INPUT SELECTOR OUTPUT	H/L	A/V SW
74	OSC CONTROL	O	AUDIO OSC CONTROL PWR ON:H PWR OFF:L		
75	Vee		-24V		
76	Vcc		BACK UP 5V		
77	OSD DATA	O	OSD, SERIAL DATA OUT	SERIAL	OSD
78	OSD STB	O	OSD CHIP SELECT OUTPUT	H	OSD
79	OSD CLK	O	OSD, SERIAL CLK OUT	SERIAL	OSD
80	BIL(L)	I	BILINGUAL DATA INPUT	L	PIF
81	Vcc		BACK UP 5V		
82	Vref		A/D REFERENCE 5V		
83	VS PWM	O	PWM OUT FOR CHANNEL SELECT DURING RF MODE	P	PIF
84	REC SAFETY	I	REC SAFETY TAB IS DETECTED L STATE SO THAT RECORDING IS INHIBITED	L	REC SAFETY SW

No.	NAME	I/O	ASSIGNMENT	ACTIVE	CN
85	POWER FAIL (L)	I	WHEN POWER IS DISCONNECTED THIS PORT DETECTS POWER FAILURE AND THEN GOES INTO POWER COMPENSATION MODE	L	
86	START SENSOR	I	TAPE START SENSOR DATA INPUT	A/D	START SENSOR
87	DRUM SEL	I	<table><tr><th></th><th>SP</th><th>LP</th><th>A/D INPUT</th><th>R501</th></tr><tr><td>PAL 4H'D</td><td>45/50</td><td>30/30</td><td>2.5~3.125</td><td>13K</td></tr></table>	A/D	
88	AFT	I	AFT ANALOG DATA INPUT FOR AUTO FINE TUNING	A/D	PIF
89	AGC	I	AFT ANALOG DATA INPUT FOR AUTO CH. SETTING	AD	PIF
90	END SENSOR	I	TAPE END SENSOR DATA INPUT	L	END SENSOR
91	PATH ADJUST	I	USE FOR PATH ADJUST	A/D	PATH JIG
92	DC ENVE	I	DC ENVE DATA INPUT	A/D	VIDEO
93	C. SYNC	I	COMPOSITE SYNC DATA INPUT	P	VIDEO
94	AV/PDC/MOD E^2PROM DATA	O	AV SW, PDC, MOD. SERIAL DATA OUT(I^2C BUS)	SERIAL	PDC PIF
95	AV/PDC/MOD E^2PROM CLK	O	AV SW, PDC, MOD. SERIAL CLOCK OUT (I^2C BUS)	SERIAL	PDC PIF
96	UHF (H)	O	USE FOR UHF BAND SELECT	H	PIF
97	VH (H)	O	USE FOR VHF HIGH BAND SELECT	H	PIF
98	VL (H)	O	USE FOR VHF LOW BAND SELECT	H	PIF
99	ST(L)	I	STEREO DATA INPUT	L	PIF
100	AV3	O	A/V INPUT SELECTOR OUTPUT	H/L	A/V SW

SECTION 7. VOLTAGE CHARTS

Voltage Charts

TDA9814T for IF IC (IC101)

MODE / PIN NO.	TWO CARRIER	NICAM	REMARKS
1	3.3	3.3	Conditions
2	3.3	3.3	: EE MODE
3	0.8	0.8	
4	1.1	0.7	
5	2.5	2.5	
6	2.7	2.9	
7	3.0	3.0	
8	2.2	2.0	
9	3.5	3.5	
10	2.3	2.5	
11	2.3	2.4	
12	2.2	1.7	
13	2.0	2.1	
14	1.9	2.1	

MODE / PIN NO.	TWO CARRIER	NICAM	REMARKS
15	2.7	2.7	Conditions
16	X	X	: EE MODE
17	2.0	2.0	X : Variable
18	1.9	1.9	
19	2.0	1.9	
20	3.0	2.2	
21	2.7	2.7	
22	2.7	2.7	
23	2.4	2.4	
24	0	0	
25	2.9	3.2	
26	4.8	4.9	
27	3.3	3.3	
28	3.3	3.3	

LA71511M for VIDEO/AUDIO IC (DC:Voltage) (IC301)

PIN NO.	REC	PB	PIN NO.	REC	PB	PIN NO.	REC	PB	PIN NO.	REC	PB
1	2.44	2.40	21	0.35	0.39	41	0.06	0.06	61	2.05	2.02
2	0.01	0.00	22	1.56	2.25	42	2.00	1.97	62	0.21	0.26
3	2.44	2.41	23	0.02	1.80	43	0.48	0.47	63	4.48	4.48
4	1.03	0.05	24	2.41	1.82	44	1.83	1.84	64	4.75	4.75
5	1.35	5.51	25	2.15	2.08	45	1.96	1.95	65	0.31	0.31
6	0.86	0.02	26	3.08	3.03	46	0.03	2.70	66	0.00	0.40
7	2.42	2.39	27	0.00	0.06	47	5.09	5.07	67	0.04	0.04
8	2.46	2.40	28	1.80	0.28	48	2.85	2.84	68	0.06	0.61
9	2.37	2.37	29	1.90	2.16	49	4.42	4.24	69	5.09	5.08
10	2.37	2.37	30	2.11	0.00	50	2.92	2.91	70	0.02	0.00
11	3.07	2.38	31	4.08	4.08	51	4.23	4.25	71	2.39	2.38
12	2.32	2.31	32	1.80	0.28	52	3.22	3.20	72	0.01	0.01
13	1.71	2.08	33	0.58	0.58	53	0.00	0.04	73	2.39	2.38
14	2.95	0.31	34	2.17	0.00	54	2.15	2.09	74	2.41	2.40
15	0.00	3.25	35	3.14	3.16	55	5.15	5.13	75	2.39	2.38
16	2.56	2.59	36	5.09	5.06	56	5.15	5.13	76	5.15	5.14
17	3.32	1.64	37	0.59	0.59	57	0.01	0.00	77	2.49	2.48
18	2.11	1.56	38	1.70	1.78	58	0.19	3.54	78	0.00	0.00
19	4.30	0.08	39	3.19	3.18	59	2.46	2.09	79	2.40	2.38
20	3.14	3.05	40	3.01	3.00	60	4.07	4.03	80	5.14	0.15

12BKK8W5ML for OSD IC DC(AC) : Volt (IC001)						LC89977M for CCD IC (IC302)		
PIN NO.	REC	PB	PIN NO.	REC	PB	PIN NO.	REC	PB
1	0.00	0.00	16	1.99	2.47	1	2.60	2.60
2	2.62	2.62	17	5.00	5.01	2	5.04	5.05
3	2.63	2.64	18	2.00	2.43	3	2.59	2.59
4	0.00	0.00	19	2.03	2.39	4	0.00	0.01
5	0.00	0.00	20	3.00	3.15	5	2.54	2.53
6	0.00	0.00	21	2.00	2.00	6	0.00	0.00
7	0.00	0.00	22	0.00	0.00	7	1.75	1.73
8	(2.2)	(2.2)	23	2.75	2.75	8	9.18	9.18
9	(2.0)	(2.0)	24	2.76	2.76	9	2.17	2.18
10	(2.2)	(2.2)	25	2.83	2.82	10	0.83	0.83
11	5.00	5.01	26	2.82	2.82	11	0.04	0.04
12	5.00	5.01	27	2.64	2.64	12	0.42	0.42
13	5.00	5.01	28	2.64	2.64	13	1.97	1.97
14	5.00	5.01	29	0.00	0.00	14	0.00	0.01
15	4.50	4.50	30	5.00	5.00			

ELECTRO CAPACITOR

LOC	POSITIVE	NEGATIVE	LOC	POSITIVE	NEGATIVE
C002	5.02	0.00	C309	2.93	0.00
C007	2.83	2.76	C315	2.93	1.40
C012	4.51	0.00	C317	1.64	0.00
C008	2.75	1.71	C320	4.05	0.00
C201	0.00	0.00	C322	3.11	2.21
C203	2.38	0.01	C324	5.03	0.00
C207	5.16	0.00	C325	1.94	0.00
C208	2.38	0.01	C326	3.05	2.16
C212	5.93	5.44	C327	1.78	0.01
C216	0.84	0.01	C330	5.03	0.01
C219	2.42	0.01	C331	4.17	0.01
C222	5.93	0.01	C333	4.18	0.01
C223	2.04	0.01	C337	2.15	0.01
C301	1.80	0.00	C343	2.37	1.85

BH7804K for Hi-Fi IC (IC251)

PIN NO.	REC	PB	PIN NO.	REC	PB
1	0.00	0.00	23	0.00	0.00
2	0.00	0.00	24	0.00	0.00
3	0.00	0.00	25	-4.82	-5.01
4	0.00	0.00	26	0.00	0.00
5	4.63	4.51	27	-4.95	-4.47
6	4.50	4.37	28	0.00	0.00
7	0.00	0.00	29	0.00	0.00
8	2.45	2.45	30	0.00	0.00
9	-4.85	-5.01	31	0.00	0.00
10	0.00	0.00	32	0.00	0.00
11	0.00	0.00	33	0.00	0.00
12	0.00	0.00	34	0.00	0.00
13	0.00	0.00	35	2.54	2.4
14	0.73	0.00	36	5.01	5.04
15	0.00	0.00	37	0.00	0.00
16	0.00	2.01	38	0.00	0.00
17	2.50	2.50	39	-5.02	-5.02
18	5.06	5.04	40	0.00	0.00
19	0.00	0.00	41	0.00	0.00
20	2.62	2.65	42	-5.13	-5.13
21	3.29	3.30	43	0.00	0.00
22	0.00	0.00	44	0.00	0.00

KA8119B for AV SW. IC (IC601)

PIN NO.	REC	PB	PIN NO.	REC	PB
1	3.96	3.45	16	6.18	6.18
2	3.38	3.46	17	6.20	6.20
3	3.50	3.26	18	4.73	4.75
4	3.95	3.90	19	4.67	4.69
5	3.38	3.46	20	6.18	6.19
6	4.97	5.00	21	9.52	9.54
7	6.12	6.14	22	6.18	6.19
8	6.12	6.14	23	4.73	4.74
9	1.17	6.20	24	4.67	4.69
10	0.00	0.00	25	0.00	0.00
11	5.05	5.10	26	4.65	4.67
12	0.14	0.15	27	2.68	2.56
13	6.14	6.15	28	0.00	0.00
14	6.17	6.19	29	2.54	2.02
15	4.71	4.72	30	1.54	1.62

AV SW IC (IC602)

PIN NO	PLAY	EE
1	2.54	3.12
2	5.12	5.05
3	2.55	3.12
4	0.82	0.82
5	0.00	0.00
6	2.59	2.59
7	0.00	0.00
8	1.10	1.69
9	5.12	5.05

BA6209 for M/T DRIVE IC (IC502)

PIN NO	REC	PB
1	0	0
2	0.5	0.5
3	0.84	0.84
4	6.1	6.1
5	0	0
6	0	0
7	12.3	12.5
8	12.3	12.5
9	0.86	0.86
10	0.5	0.5

24LC08B for EEPROM IC (IC503)

PIN NO	REC	PB
1	0	0
2	0	0
3	0	0
4	0	0
5	5.26	5.26
6	0	0
7	4.71	4.71
8	4.71	4.71

K1A7033P for RESET IC (IC504)

PIN NO	REC	PB
1	5.28	5.28
2	0	0
3	5.28	5.28

MC4558C for OPAMP IC (IC505)

PIN NO	REC	PB
1	2.92	3.4
2	3.07	3.2
3	3.17	3.2
4	0	0
5	5.9	6.0
6	3.04	3.0
7	3.07	3.2
8	3.07	3.2

IC051 (SDA5649)

MODE / PIN NO.	PAL	REMARKS
1	0	Conditions
2	4.7	: EE MODE
3	4.7	
4	0	
5	0.4	
6	5.0	
7	2.5	

MODE / PIN NO.	PAL	REMARKS
8	0	Conditions
9	2.7	: EE MODE
10	2.6	
11	2.7	
12	1.5	
13	1.5	
14	5.0	

MAIN PART TR

PORTS / LOC.	EMITTER		COLLECTOR		BASE	
	PB	REC	PB	REC	PB	REC
Q501	0	0	0	0	4.7	4.7
Q502	6	06	6	06	5.3	5.3
Q503	0	0	0	0	0.76	0.76
Q504	12.5	12.3	12.5	12.3	11.8	11.6
Q506	0	0	0	0	0.76	0.76

AV SW PART TR

PORTS / LOC.	EMITTER		COLLECTOR		BASE	
	PB	POWER OFF	PB	POWER OFF	PB	POWER OFF
Q601	2.30	2.40	0.00	0.00	1.60	1.70
Q602	5.30	5.30	0.00	0.00	4.60	4.60
Q603	5.40	5.40	0.00	0.00	4.70	4.70
Q604	3.20	2.40	0.00	0.00	2.50	1.75
Q605	5.40	5.40	0.00	0.00	4.70	4.70
Q606	5.40	5.40	0.00	0.00	4.70	4.70
Q607	12.3	12.2	12.3	0.00	0.00	12.2
Q608	0.00	0.00	0.00	12.2	5.20	0.00
Q609	0.00	0.00	5.20	5.30	0.00	0.00

VIDEO PART TR (PAL MODE)

PORTS / LOC.	EMITTER		COLLECTOR		BASE	
	PB	REC	PB	REC	PB	REC
Q001	2.64	2.61	0	0	1.94	1.91
Q301	0.83	2.1	4.33	3.11	1.47	2.77
Q302	1.58	1.62	5.2	5.21	2.22	2.25
Q303	2.02	2.02	0.01	0	1.38	1.38
Q304	1.23	1.23	5.15	5.17	1.86	1.86
Q307	1.13	1.13	5.19	5.21	1.76	1.76
Q305	1.15	1.16	4.61	4.62	1.77	1.78

IF MODULE PART TR

PORTS / LOC.	EMITTER		COLLECTOR		BASE	
	TWO CARRIER	NICAM	TWO CARRIER	NICAM	TWO CARRIER	NICAM
Q101	-	0.3	-	7.0	-	1.0
Q102	1.5	1.4	5.0	5.0	2.1	2.1

AUDIO PART TR

PORTS / LOC.	EMITTER		COLLECTOR		BASE	
	PB	REC	PB	REC	PB	REC
Q201	5.4	1.82	5.9	5.46	5.9	2.41
Q202	5.19	5.2	5.16	-28.77	4.53	5.2
Q203	0	-23.44	0.01	0	0.68	-29.26
Q204	0	-23.44	0	0	0.7	-28.58
Q205	0	0.02	5.43	1.64	0.02	0.86

PIF PART TR (EE MODE)

PORTS / LOC.	EMITTER		COLLECTOR		BASE	
	TWO CARRIER	NICAM	TWO CARRIER	NICAM	TWO CARRIER	NICAM
Q171	9.4	9.4	X	X	X	X
Q172	9.4	9.4	X	X	X	X
Q173	9.4	9.4	X	X	X	X
Q174	0	0	X	X	X	X
Q175	0	0	X	X	X	X
Q176	0	0	X	X	X	X
Q177	5.1	5.1	5.1	4.9	4.4	4.4
Q178	0	0	0	0	3.9	3.9
Q179	9.8	9.8	9.8	9.8	9.0	9.0
Q180	0	0	0	0	4.0	4.0

* X : Variable

POWER PART TR

PORTS / LOC.	EMITTER		COLLECTOR		BASE	
	POWER ON	POWER OFF	POWER ON	POWER OFF	POWER ON	POWER OFF
Q811	10.43	10.4	12.6	12.2	11.0	11.0
Q816	10.43	10.4	12.6	12.2	11.0	11.0
Q812	5.18	0.25	5.94	6.4	5.88	0.06
Q815	5.18	0.25	5.94	6.4	5.88	0.06
Q813	0.0	0.0	5.8	0.06	0.0	0.79
Q814	-9.6	-9.7	-17.2	-22.3	-10.25	-10.27

SECTION 8. SERVICE MODE

8-1. Service Mode

ITEM	OSD	REMARKS
①Press the [MENU] button to go to [MAIN MENU] screen and press the number 484 in sequence then go to [SERVICE MODE] screen. ②Display language is ENGLISH only. ③Maintain the selected mode continuously. ④Composition of the SERVICE MODE is as follows. 1) SERVICE MODE FOR REPAIR 2) TIMER CHECK MODE 3) CHANGE OF EEPROM DATA 4) Hi-Fi CHECK MODE ⑤Everlasting data memory at E^2PROM	① **MAIN MENU** → Timer Program Timer Review VCR Setup **PR+/-:select** **OK :confirm MENU:end** **WELCONE TO SVC MODE!** **(M37775M7H-146GP)** 1 SVC MODE FOR REPAIR 2 TIMER CHECK MODE 3 CHANGE OF EEPROM DATA 4 Hi-Fi CHECK MODE 0 EXIT	

8-2. SVC Mode for Repair

1. ERROR CHECK MODE

ITEM	OSD	REMARKS
① Press the number 1 button, then OSD ① is displayed in the initial SVC mode screen.	① **SVC MODE FOR REPAIR** 1 DECK JIG CONNECTION MODE (OFF) 2 EE MODE WITHOUT DECK MODE (OFF) 3 ERROR CHECK MODE 0 RETURN * ERROR CHECK MODE	
② Press the number 3 button, then OSD ② is displayed in the SVC MODE FOR REPAIR screen. It can be selected in TAPE OUT state only.	② **ERROR CHECKING** CHECKING PLEASE WAIT . . . * "CHECKING" is blinks for 5 seconds.	
③ PAL TEST TAPE is inserted after guide message is appeared, PLAY ➔ CUE ➔ STILL ➔ SLOW ➔ F.F ➔ REW ➔ PLAY ➔ REV ➔ STOP operations are executed automatically and OSD ④ will be displayed. To press 0 button on OSD ④ will be ejected.	③ **ERROR CHECK MODE** PLEASE INSERT A TEST TAPE FOR ERROR CHECK.	
④ The error state is displayed 'OK' or 'NG' in ERROR CHECK RESULTS screen. * '--' means unchecked state.	④ **ERROR CHECK RESULTS** 1. DRUM : OK 2. CAPSTAN : OK 3. S-RELL : OK 4. T-REEL : OK 5. CAM : OK 6. CTL : NG 7. ENVELOPE : -- 0 RETURN	

2. DECK JIG CONNECTION MODE

ITEM	OSD	REMARKS
①Press the number 1 button, OFF ↔ ON is toggled in the SVC MODE FOR REPAIR screen. * The initial state is set to OFF mode.		

3. EE MODE WITHOUT DECK

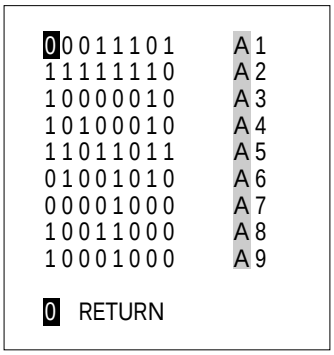
ITEM	OSD	REMARKS
①Press the number 2 button, OFF ↔ ON is toggled in the SVC MODE FOR REPAIR screen. * The initial state is set to OFF mode.		

8-3. Timer Check Mode

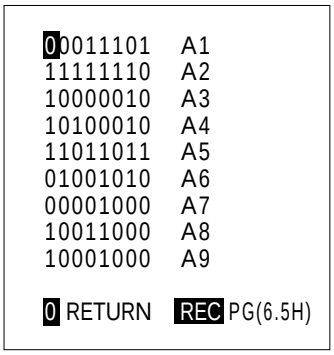
1. FAST CLOCK OPERATION

ITEM	OSD	REMARKS
* TIMER CHECK MODE is used to check the TIMER RECORD/SHOWVIEW RECORD and VFD SEGMENT. ①Press the number 2 button, then OSD ① will be displayed in the initial SVC mode screen. ②Press the number 1 button, FAST CLOCK OPERATION will be selected in the TIMER CHECK MODE screen. * The clock is operated with 60 times (1Min → 1 Sec.) ③Press the number 1 button, VFD SEGMENT CHECK will be selected in the TIMER CHECK MODE screen. * All segments are lit on VFD for 5 seconds.	① TIMER CHECK MODE 1 FAST CLOCK OPERATION 2 VFD SEGMENT CHECK 0 RETURN	

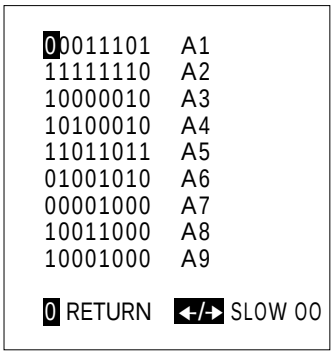
8-4. Change of EEPROM Data

ITEM	OSD	REMARKS
* CHANGE OF EEPROM DATA MODE is used for change the VIDEO/AUDIO characteristic data. ①Press the number 3 button, OSD ① will be displayed in the initial SVC mode screen. ②Press the [←] button to move from right to left. ③Press the [→] button to move from upper to lower. ④Press the [OK] button to confirm the data change. ⑤The data is not changable related to the system. * System data changed by pressing the [PAL/SECAM] key.	 * ▩ parts are toggled like as 'A → P → M → A' by pressing the [PAL/SECAM] key.	A : AUTO P : PAL M : MESECAM

8-5. Change of EEPROM Data in PB Mode

ITEM	OSD	REMARKS
①Press the number 3 button, OSD ① will be displayed in PB mode screen. * Press the [REC] button to adjust the PG (6.5H). ②Press the [←] button to move from right to left. ③Press the [→] button to move from upper to lower. ④Press the [OK] button to confirm the data change. ⑤The data is not changable related to the system.	① 	

8-6. Change of EEPROM Data in Slow Mode

ITEM	OSD	REMARKS
①Press the [SLOW] button, OSD ① will be displayed in PB mode screen. ②Press the [←/→] button to adjust the SLOW TRACKING. ③Adjustment step is [←] : 0~99 and [→] : 0~99	① 	

8-7. Hi-Fi check mode

ITEM	OSD	REMARKS
①Press the number 4 key, then OSD ① is displayed in the initial SVC mode screen. ②Press the number 1 key in the ① screen, then the auto adjust mode is executed for the Hi-Fi FM carrier. In the screen, blinking the "Check.." strings during the adjusting. If the adjustment is finished succesfully, the item displays the "OK", otherwise "NG". ③Press the number 2 key, then you can change the FM noise detect level with "-10% → 0% → +10%". ④Press the number 3 key, then you can change the output gain with "10.8dB → 11.5dB → 12.8dB → 14.0dB". ⑤Press the number 4 key, then you can change the FM L/R mix ratio with "-10.0dB → -8.5dB → -12.5dB- → 11.5dB". ⑥Press the number 5 key, then you can set the default values of all items ⑦Press the number 0 key, then the current values are saved at the EEP ROM and quit this mode.	① **Hi-Fi CHECK MODE** 1 AUTO ADJUST OK 2 FM DET LEVEL -10% 3 OUTPUT GAIN 14.0dB 4 FM MIX RATIO -10.0dB 5 HIFI INITIAL DATA **1-5** SELECT **0** RETURN	

8-8. The Method to Initialize the EEPROM

1. When [484] is sequentially pressed in MENU mode, the SERVICE mode is activated.
2. Choose "CHANGE OF EEPROM DATA" by pressing [3].
3. The input video signal should be PAL or null signal, and the speed should be SP.
4. Change the 7th and the 8th bits of GROUP 1 to 11 by the [←], [→], [OK] buttons.
5. The data are stored in EEPROM when [0] button is pressed.
6. Pull out the mains power cord.
7. Instantly short the JP251 and JP252 jumpers on MAIN PCB to reset the VCR.
8. Plug in the mains power cord again.

8-9. The Method to Control the A/V 1Chip (LA71511M) Serial Data

1. Access to the SERVICE MODE by pressing [484] buttons sequentially in MAIN MENU.
2. Choose "CHANGE OF EEPROM DATA" by pressing [3].
3. Then the data table which indicates the current video system (PAL/SECAM) and speed (SP/LP) is displayed on screen, while it detects the system and speed automatically.
4. Select the system and speed using [PAL/SECAM] button and [SP/LP] button on remote control if you need to change.
5. The cursor on the data table moves from right to left when the [←] button is pressed.
6. The cursor on the data table moves from up to down when the [←] button is pressed.
7. Data is toggled whenever the [OK] button is pressed on the cursor position.
8. If you need to change the data related to TRICK PLAY, it can be easily accessed in STILL mode.
9. First, the mode of the system detection should be AUTO mode after you change the data, and then if [0] button is pressed after this, the data of the current status are stored in EEPROM, then the SERVICE MODE MENU is displayed.
10. The data corresponding to the system, speed, input selection, trick play are not changed.

* The group indication part on the data table is changed as in order of A1, A2, ... → P1, P2, ... → M1, M2, ... → A1, A2, ... whenever the [PAL/SECAM] button on remote control is pressed, the system detection of which are A(AUTO), P(FORCED PAL), M(FORCED MESECAM) respectively.

* The data changed to the current system according to the input video signal automatically in case of AUTO mode. and if no signal, it changes to PAL system.

* Adjust the correct system by prssing the [PAL/SECAM] button on remote control if the current status of the system is not correspont to the input vodeo signal.

ADDRESS \ BIT	8	7	6	5	4	3	2	1
0000 0001 GROUP 1 COMMON	00 AUTO COLOR KILLER (NORMAL) 10 FORCED KILLER 01 FORCED COLOR 11 PROHIBIT		00 Y DELAY 160nS 10 Y DELAY 80nS 01 Y DELAY 0nS 11 Y DELAY -80nS		00 LP 10 EP 01 SP/CARRIER SHIFT STOP 11 SP/CARRIER SHIFT		00 REC 10 PB 01 EE 11 REC-MUTE	
0000 0010 GROUP 2 COMMOM	0 ACK OUT MODE 1 SLD OUT MODE	0 FIELD FREQ. 60Hz 1 FIELD FREQ. 50Hz	0 3.58MHz (C) 1 4.43MHz (C)	0 3.58MHz (Y) 1 4.43MHz (Y)	00 X1 (3.759545MHz) 10 X2 (4.433619/3.582056MHz) 01 X3 (3.575611MHz) 11 X2 (43433619/3.582056MHz)AND PB-H OUT		00 NTSC 10 PAL 01 MESECAM 11 SECAM	
0000 0011 GROUP 3 COMMON	000 NC1 CTL/DETAIL CTL-1 LIM=MAX 001 NC1 CTL/DETAIL CTL-2 010 NC1 CTL/DETAIL CTL-3 011 NC1 CTL/DETAIL CTL-4 100 NC1 CTL/DETAIL CTL-5 101 NC1 CTL/DETAIL CTL-6 110 NC1 CTL/DETAIL CTL-7 111 NC1 CTL/DETAIL CTL-8 LIM=MAX			00 NL CTL-1 -2.5dB 01 NL CTL-2 0dB 10 NL CTL-3 +1.5dB 11 NL CTL-4 +2.5dB		0 YNR MODE 1 LNC MODE	00 YNR OFF 10 YNR STANDARD 01 YNR MIDIUM 11 YNR STRONG	
0000 0100 GROUP 4 REC	00 WHITE CLIP LEVEL 180% 01 WHITE CLIP LEVEL 185% 10 WHITE CLIP LEVEL 190% 11 WHITE CLIP LEVEL 195%		0 ANR ON 1 ANR OFF	0 NORMAL X0/VX0 MODE 1 FORCED XO (FREE RUN MODE)	0 REC EQ TRAP 700KHz 1 REC EQ TRAP 1MHz	0 REC CUT OFF 5.5M 1 REC CUT OFF 5.0M	00 REC EQ R-LPF -3.2dB (2M TO 3.8M) 10 REC EQ R-LPF -3.2dB (2M TO 3.8M) 01 REC EQ R-LPF -3.2dB (2M TO 3.8M) 11 REC EQ R-LPF -3.2dB (2M TO 3.8M)	
0000 0101 GROUP 5 COMMON	00 REC FM LEVEL -0.9dB 01 REC FM LEVEL 0dB 10 REC FM LEVEL +0.9dB 11 REC FM LEVEL +1.8dB		0 FM AGC ON 1 FM AGC OFF (THROUGH)	0 COPY GUARD OFF 1 COPY GUARD ON	00 VIDEO INPUT 3 10 VIDEO INPUT 2 01 VIDEO INPUT 1 11 PROHIBIT		00 REC C LEVEL 0dB 01 REC C LEVEL -1.5dB 10 REC C LEVEL -3dB 11 REC C LEVEL -4.5dB	
0000 0110 GROUP 6 PB	000 PB EQ PEAK-1 MAX 001 PB EQ PEAK-2 010 PB EQ PEAK-3 011 PB EQ PEAK-4 MID 100 PB EQ PEAK-5 101 PB EQ PEAK-6 110 PB EQ PEAK-7 111 PB EQ PEAK-8 MIN			0 PB EQ TRAP 700KHz 1 PB EQ TRAP 1MHz	00 PB EQ TRAP 7M 10 PB EQ TRAP 8M 01 PB EQ TRAP 9M 11 PB EQ TRAP 10M		00 PB EQ CARR. 5.0M 10 PB EQ CARR. 5.5M 01 PB EQ CARR. 6.0M 11 PB EQ CARR. 6.5M	
0000 0111 GROUP 7 PB	00 THROUGH 10 NAP 01 BAL A-MOD 11 SYNC CARRIER OUT MODE		0 APC LOOP BEFORE 1 APC LOOP AFTER	0 NORMAL 1 SQ PB	0 DOC OFF 1 DOC AUTO	0 BURST DEEM 5.0dB 1 BURST DEEM 5.5dB	0 PHASE ALTERNATOR ON 1 PHASE ALTERNATOR OFF	0 NORMAL PB 1 TRICK PB
0000 1000 GROUP 8 PB	00 NC2 CTL-1 K=MAX 01 NC2 CTL-2 10 NC2 CTL-3 11 NC2 CTL-4 K=MIN		0 THIS BIT IS FIX	0 VIDEO PEAK LOW 1 VIDEO FEAK HIGH	0000 PIC CTL -7dB (SOFT) 0001 PIC CTL -6dB 0010 PIC CTL -5dB 0011 PIC CTL -4dB 0100 PIC CTL -3dB 0101 PIC CTL -2dB 0110 PIC CTL -1dB 0111 PIC CTL 0dB		1000 PIC CTL 0dB 1001 PIC CTL +1dB 1010 PIC CTL +2dB 1011 PIC CTL +3dB 1100 PIC CTL +4dB 1101 PIC CTL +5dB 1110 PIC CTL +6dB 1111 PIC CTL +7dB (SHARPNESS)	
0000 1001 GROUP 9 AUDIO	0 MULTI SET MODE 1 4.43MHz ONLY SET MODE	0 NORMAL MODE 1 QH OUT MODE	00 SP (AUDIO) 01 LP (AUDIO) 10 EP (AUDIO) 11 PROHIBIT		00 AUDIO INPUT 3 10 AUDIO INPUT 2 01 AUDIO INPUT 1 11 PRIHIBIT		00 EE (AUDIO) 10 PB (AUDIO) 01 REC (AUDIO) 11 PROHIBIT	

8-11. Sanyo A/V 1chip Serial Data (PAL 4H'D)

pal sp

EE/REC/PB								
GROUP 1	0	0	0	1	1	1		
GROUP 2	1	1	1	1	1	1	1	0
GROUP 3	1	0	0	0	0	0	1	0
GROUP 4	1	0	1	0	0	1	1	1
GROUP 5	0	1	0	1	1	0	1	1
GROUP 6	1	0	0	0	1	0	1	0
GROUP 7	0	0	0	0	1	0	0	0
GROUP 8	1	0	0	1	1	0	0	0
GROUP 9	1	0	0	0	1	0		
	8	7	6	5	4	3	2	1

TRICK PLAY								
GROUP 1	0	0	0	1	1	1	1	0
GROUP 2	1	1	1	1	1	1	1	0
GROUP 3	1	0	0	0	0	0	1	1
GROUP 4	1	0	1	0	0	1	1	1
GROUP 5	0	1	0	1	1	0	1	1
GROUP 6	0	1	0	0	1	0	1	0
GROUP 7	0	0	1	0	0	0	0	1
GROUP 8	1	0	0	1	1	0	0	0
GROUP 9	1	0	0	0	1	0	1	0
	8	7	6	5	4	3	2	1

pal lp

EE/REC/PB								
GROUP 1	0	0	0	1	0	0		
GROUP 2	1	1	1	1	1	1	1	0
GROUP 3	1	0	0	0	0	0	1	0
GROUP 4	1	0	1	0	0	0	1	1
GROUP 5	0	1	0	1	1	0	0	1
GROUP 6	0	1	1	0	1	0	1	0
GROUP 7	0	0	1	0	1	0	0	0
GROUP 8	1	0	0	1	1	0	0	0
GROUP 9	1	0	0	1	1	0		
	8	7	6	5	4	3	2	1

TRICK PLAY								
GROUP 1	0	0	0	1	0	0	1	0
GROUP 2	1	1	1	1	1	1	1	0
GROUP 3	1	0	0	0	0	0	1	1
GROUP 4	1	0	1	0	0	0	1	1
GROUP 5	0	1	0	1	1	0	0	1
GROUP 6	0	0	1	0	1	0	1	0
GROUP 7	0	1	1	0	0	0	1	1
GROUP 8	1	0	0	1	1	0	0	0
GROUP 9	1	0	0	1	1	0	1	0
	8	7	6	5	4	3	2	1

mesecam sp

EE/REC/PB								
GROUP 1	0	1	0	1	1	1		
GROUP 2	1	1	1	1	1	1	0	1
GROUP 3	1	0	0	0	0	0	1	0
GROUP 4	1	0	1	1	0	1	1	1
GROUP 5	0	1	0	1	1	0	1	1
GROUP 6	1	0	0	1	1	0	1	0
GROUP 7	0	0	0	0	1	0	0	0
GROUP 8	1	0	0	1	1	0	0	0
GROUP 9	1	0	0	0	1	0		
	8	7	6	5	4	3	2	1

TRICK PLAY								
GROUP 1	0	1	0	1	1	1	1	0
GROUP 2	1	1	1	1	1	1	0	1
GROUP 3	1	0	0	0	0	0	1	1
GROUP 4	1	0	1	1	0	1	1	1
GROUP 5	0	1	0	1	1	0	1	1
GROUP 6	0	1	0	1	1	0	1	0
GROUP 7	0	0	0	0	0	0	0	1
GROUP 8	1	0	0	1	1	0	0	0
GROUP 9	1	0	0	0	1	0	1	0
	8	7	6	5	4	3	2	1

mesecam lp

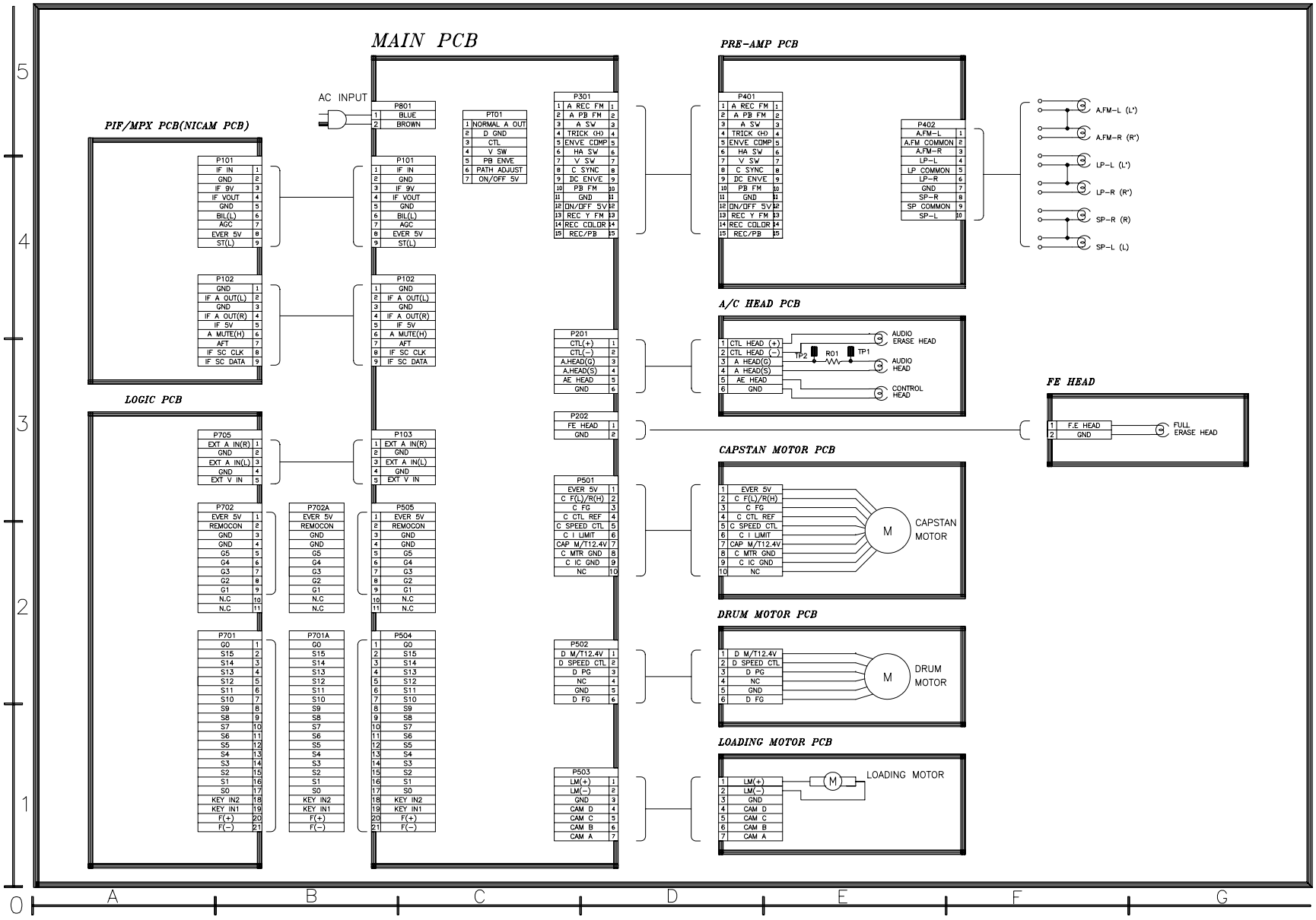
EE/REC/PB								
GROUP 1	0	1	0	1	0	0		
GROUP 2	1	1	1	1	1	1	0	1
GROUP 3	1	0	0	0	0	0	1	0
GROUP 4	1	0	1	1	0	0	1	1
GROUP 5	0	1	0	1	1	0	0	1
GROUP 6	0	1	1	1	1	0	1	0
GROUP 7	0	0	1	0	1	0	0	0
GROUP 8	1	0	0	1	1	0	0	0
GROUP 9	1	0	0	1	1	0		
	8	7	6	5	4	3	2	1

TRICK PLAY								
GROUP 1	1	0	0	1	0	0	1	0
GROUP 2	1	1	1	1	1	1	0	1
GROUP 3	1	0	0	0	0	0	1	1
GROUP 4	1	0	1	1	0	0	1	1
GROUP 5	0	1	0	1	1	0	0	1
GROUP 6	0	0	1	1	1	0	1	0
GROUP 7	0	0	0	0	0	0	1	1
GROUP 8	1	0	0	1	1	0	0	0
GROUP 9	1	0	0	0	1	0	1	0
	8	7	6	5	4	3	2	1

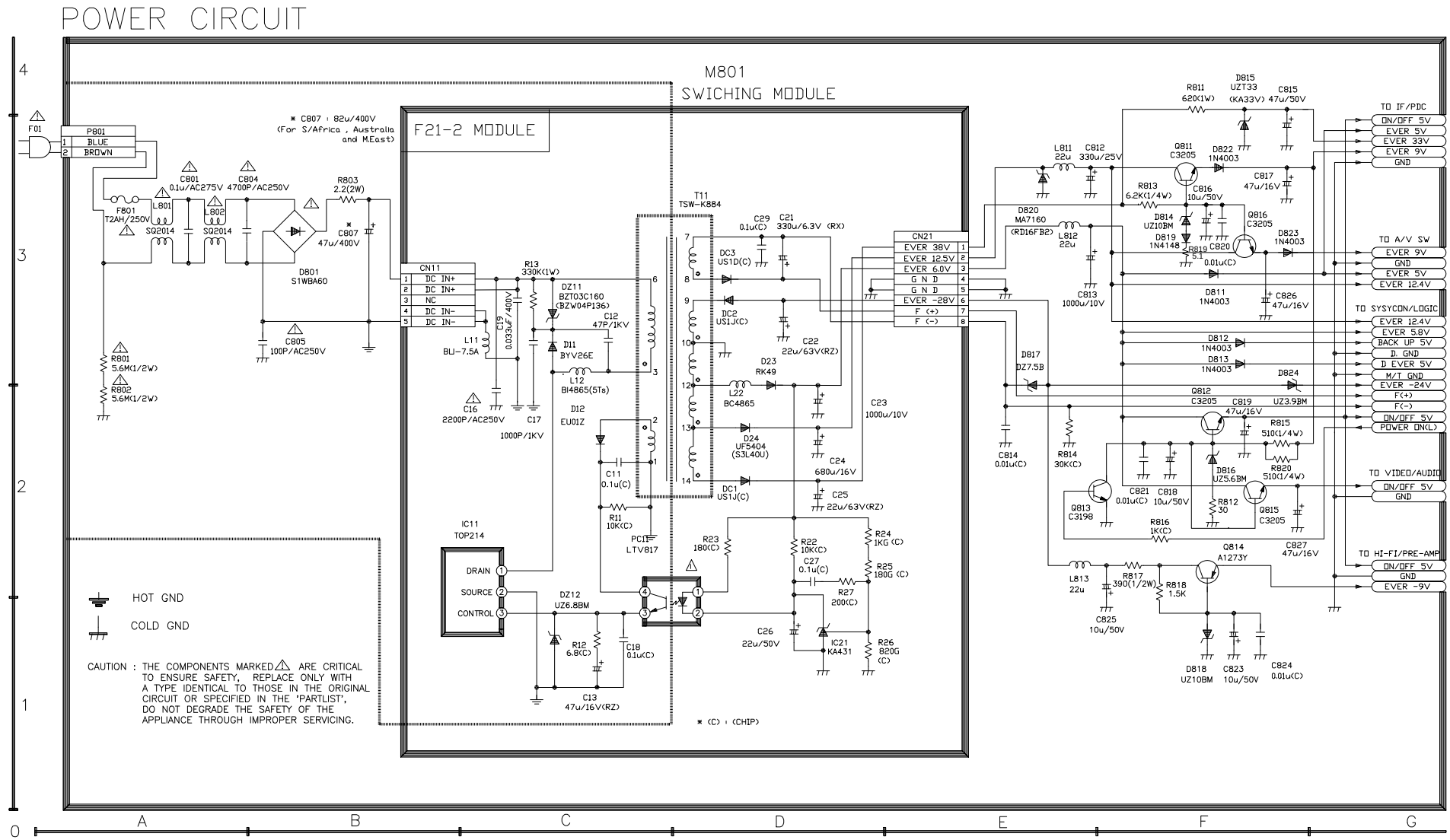
* The 1st and bit of GROUP 1 and GROUP 9 are automatically changed according to the mode (REC, PB, EE)
* In case of NTSC PB, the 7th bit of GROUP 2, the 2nd and 1st bit of GROUP 2, and the 8th and 7th bit of GROUP 7 are automatically changed to "0", "00", and "10" respectively based on PAL DATA.
* Only the data of GROUP 6, GROUP 7 are changed in TRICK PLAY based on PB MODE.
* The 2nd bit of GROUP 7 are automatically changed to "1" in STILL/SLOW, and to "0" in CUE/REV during SP TRICK PLAY.

9-1. Connection Diagram

CONNECTION DIAGRAM

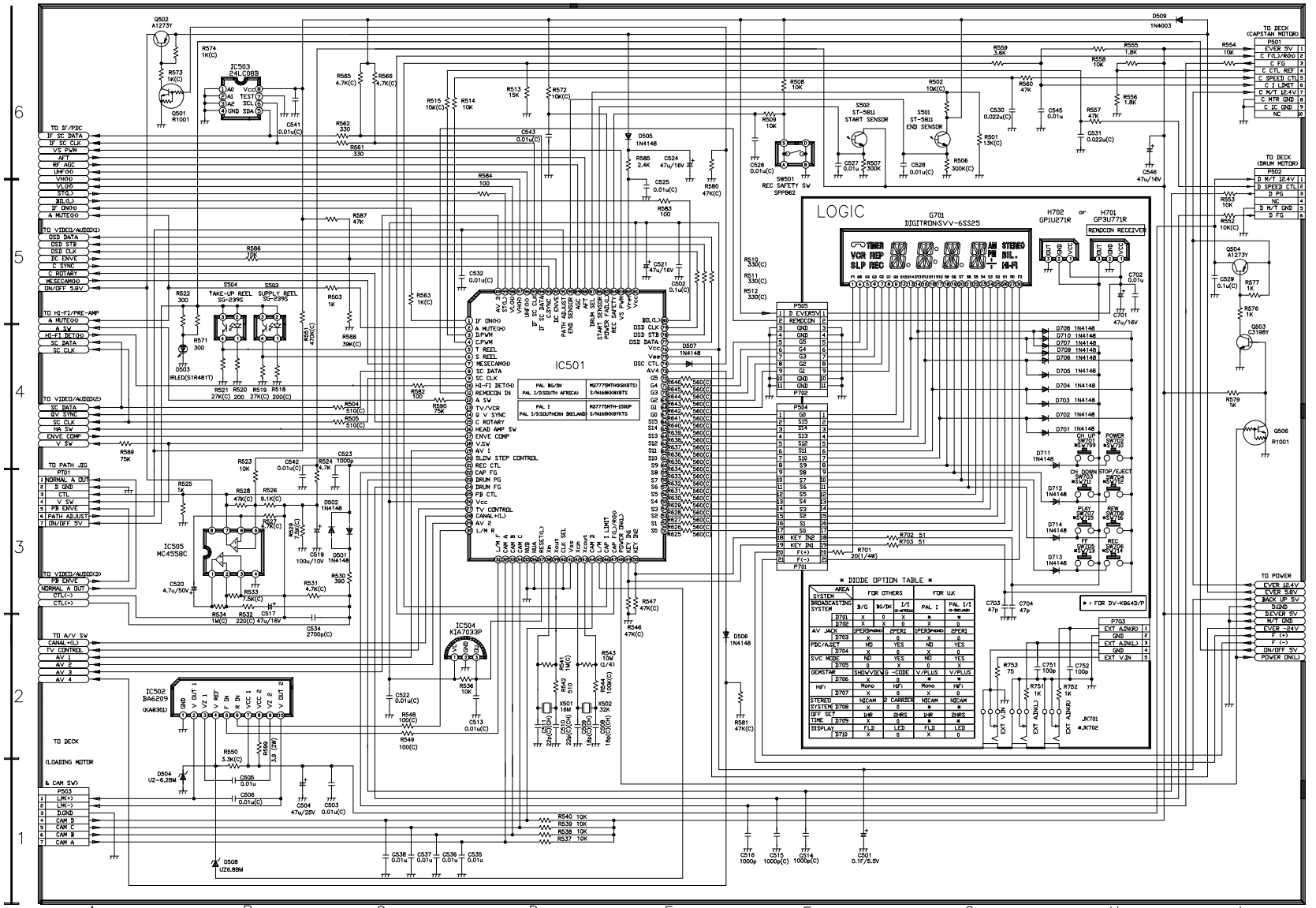


9-2. Power Circuit Diagram

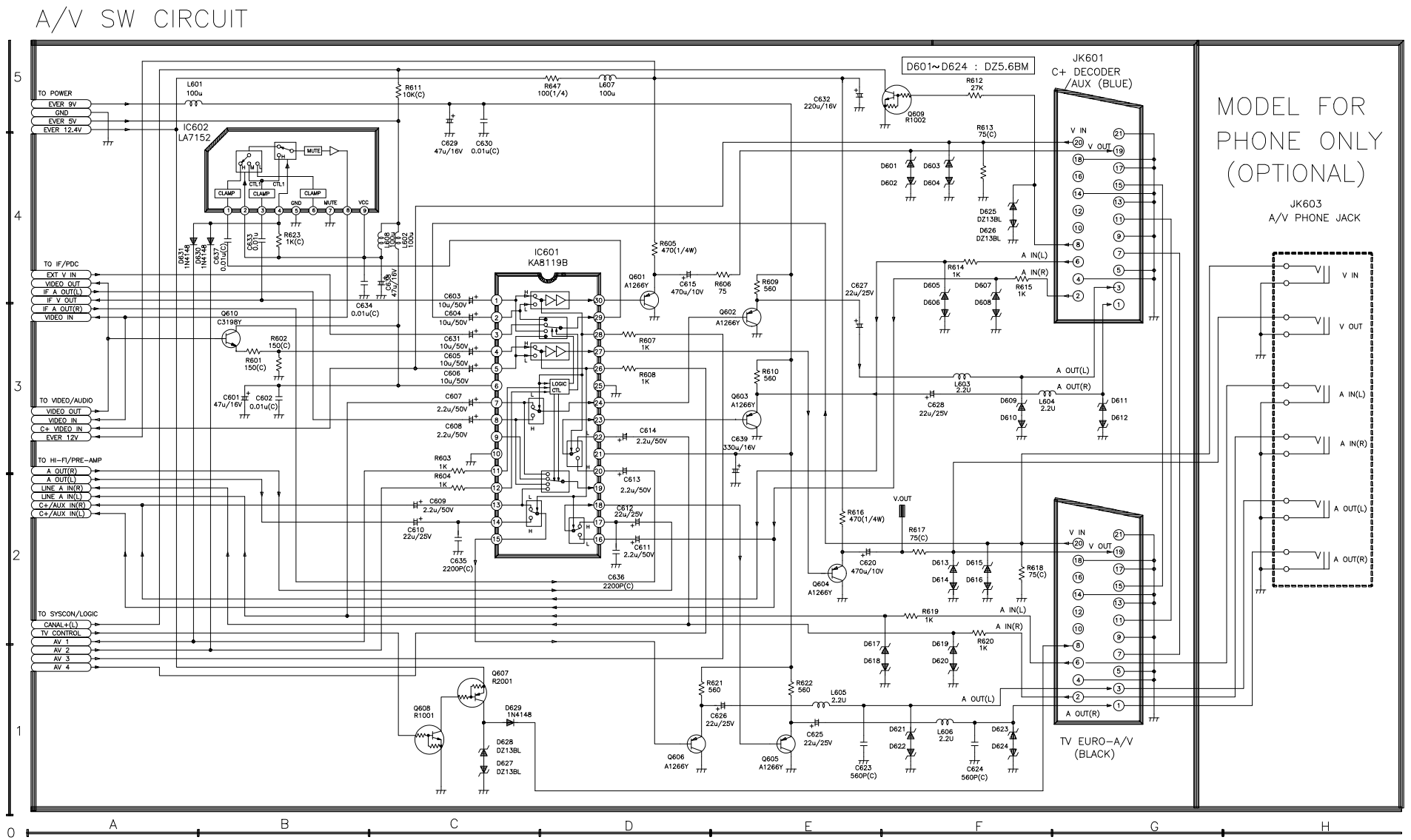


9-3. Syscon and Logic Circuit Diagram

SYSCON/LOGIC CIRCUIT

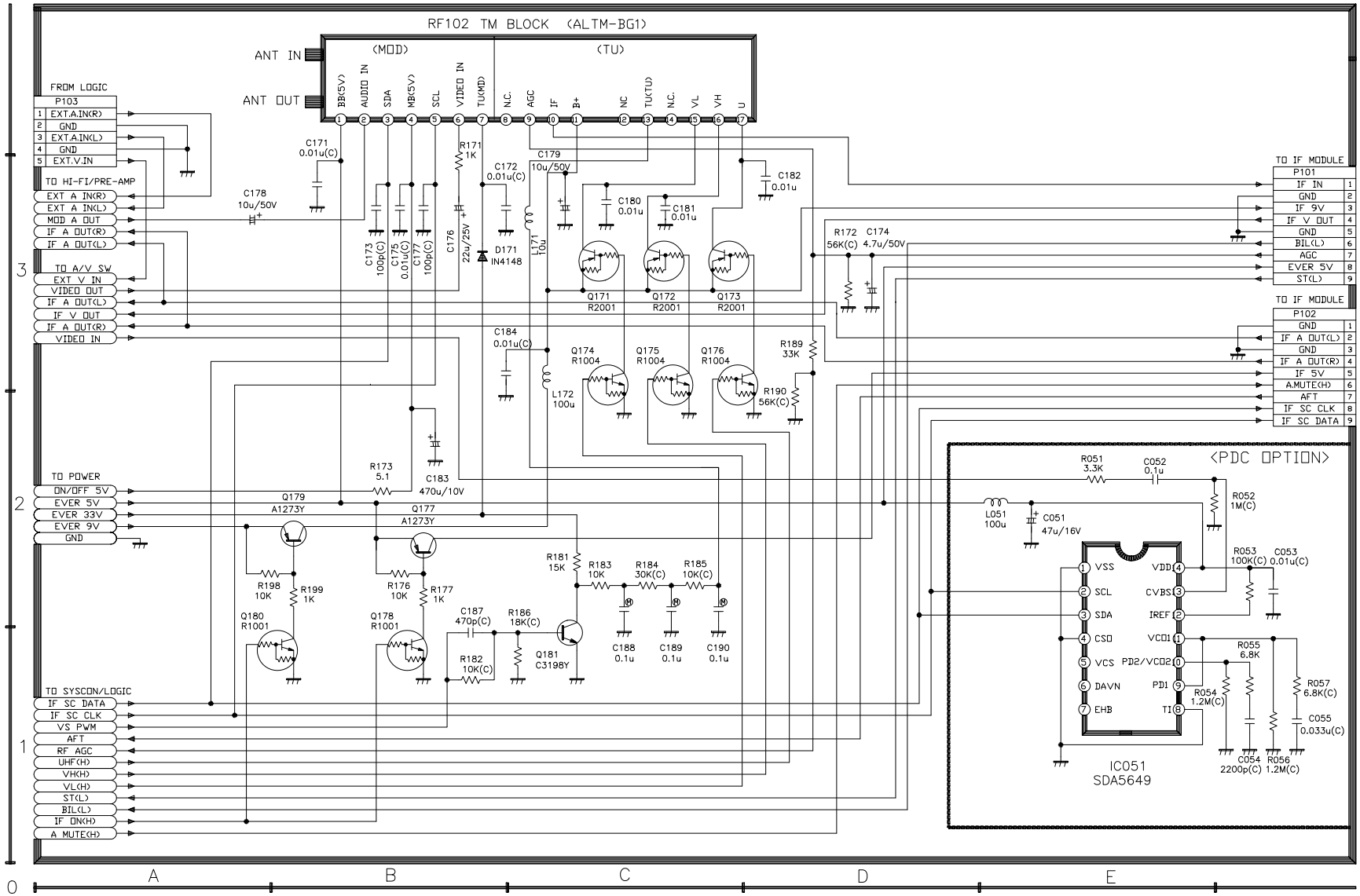


9-4. AV SW Circuit Diagram



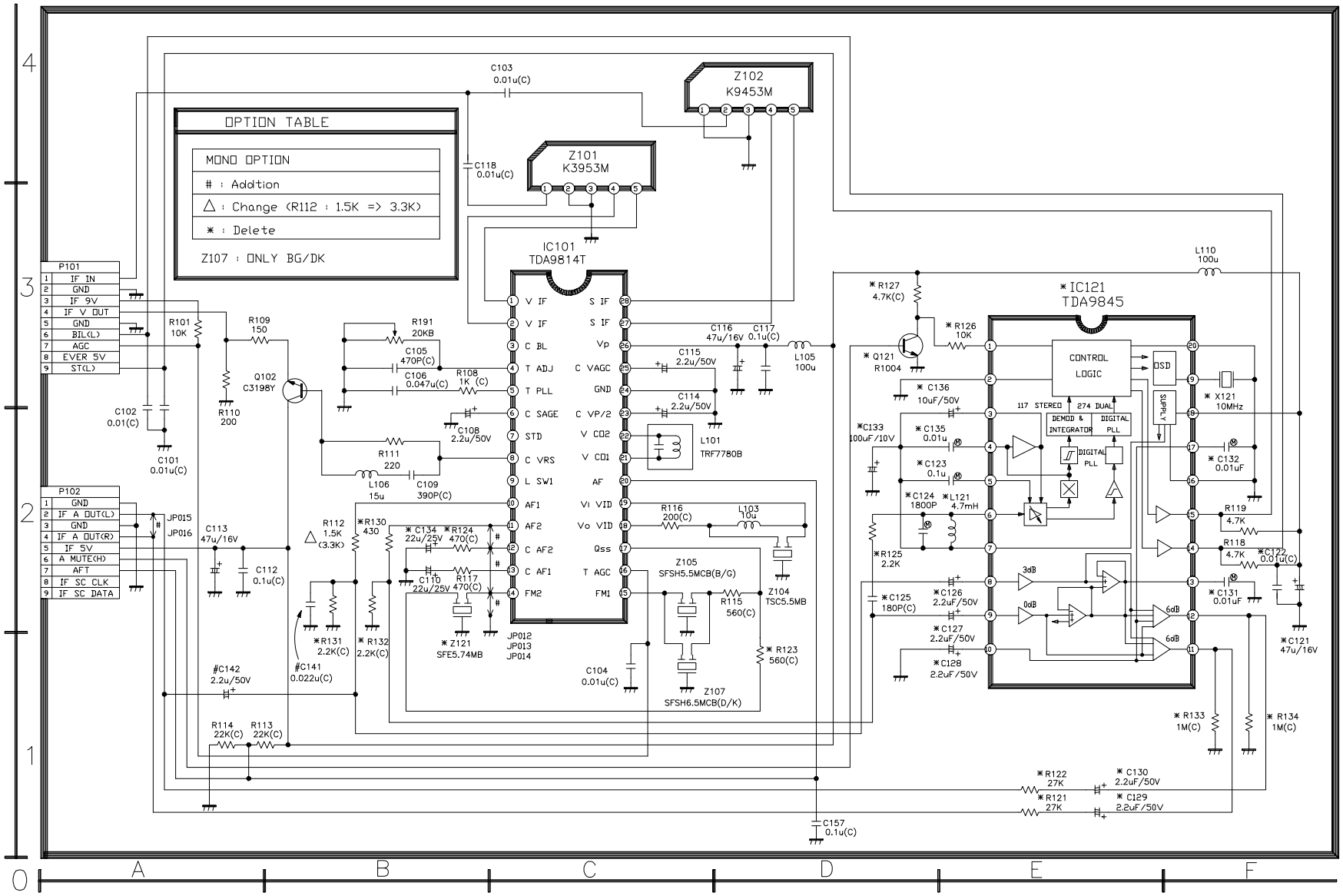
9-5. IF/PDC Circuit Diagram (TM)

IF/PDC CIRCUIT



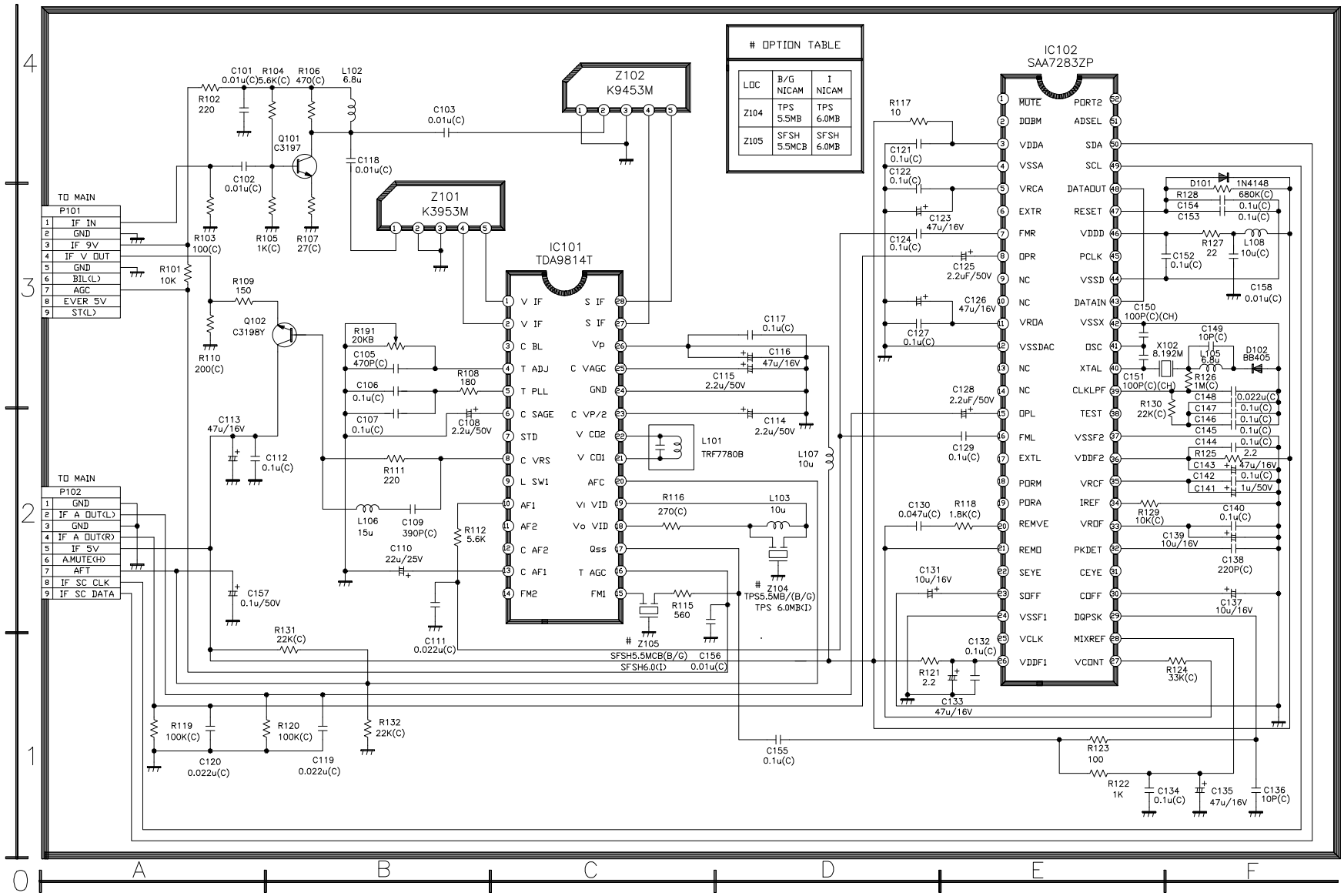
9-6. If Module Circuit Diagram (A2)

PIF/MPX MODULE CIRCUIT

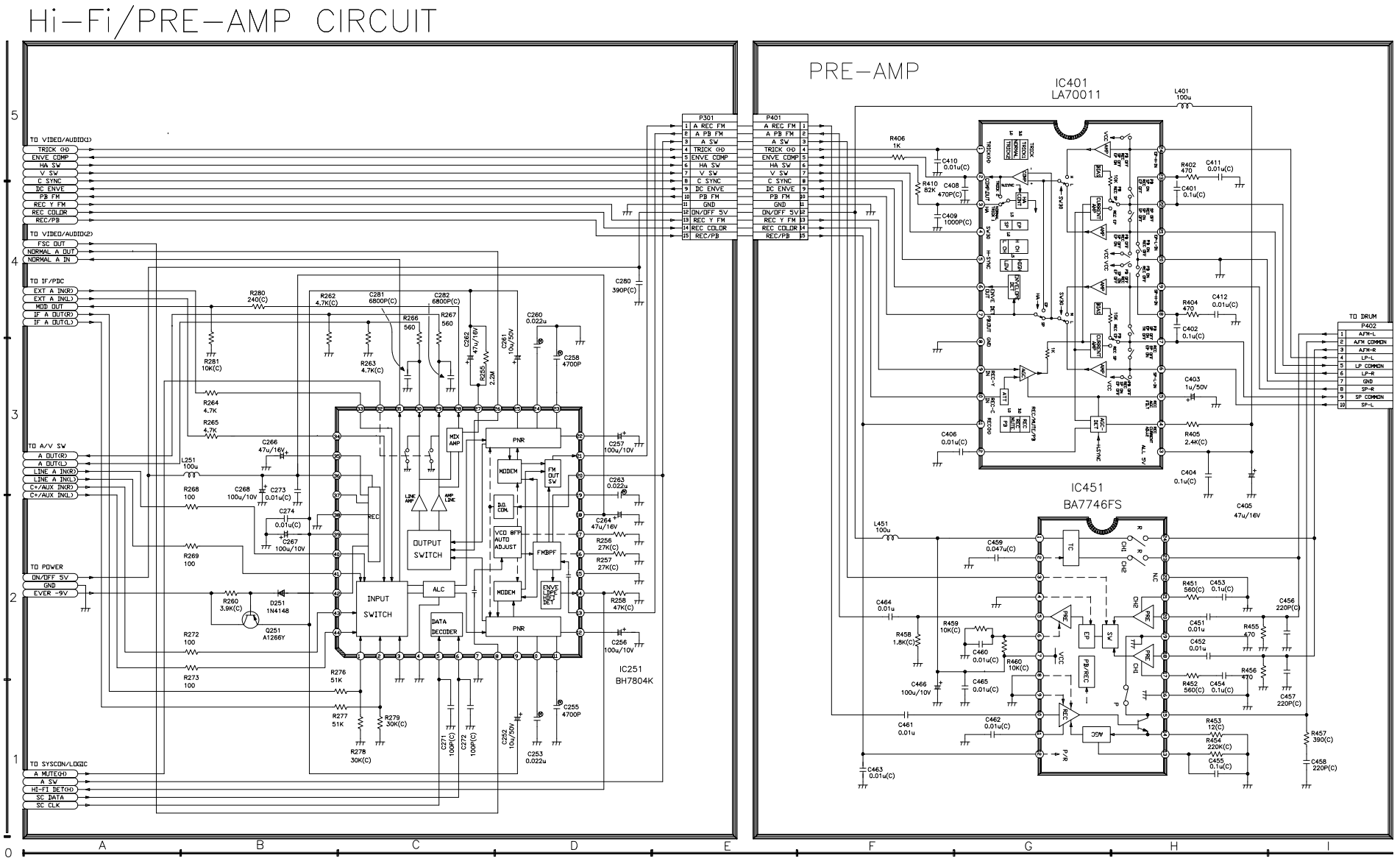


9-7. If Module Circuit Diagram (Nicam)

PIF/NICAM MODULE CIRCUIT

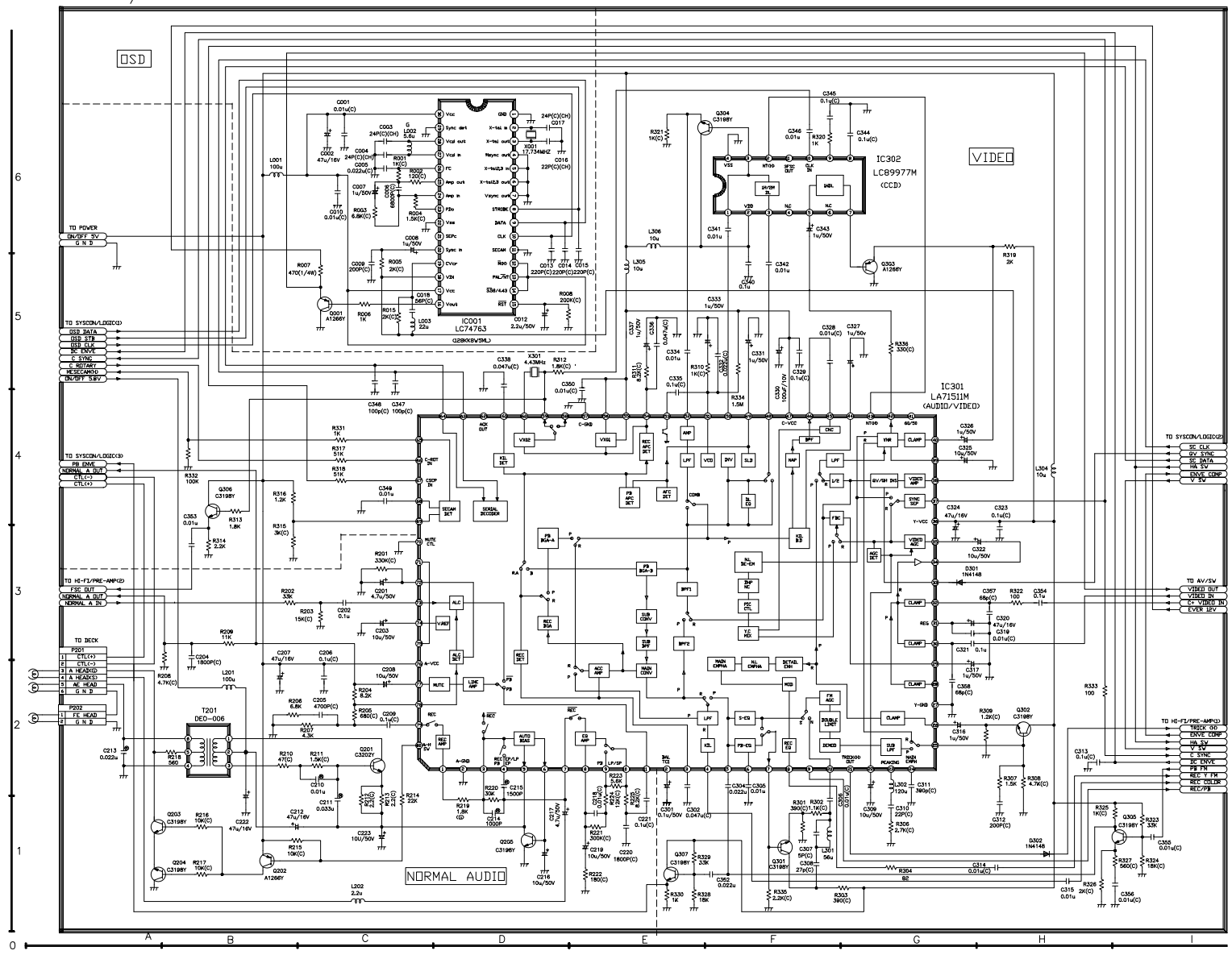


9-8. Hi-Fi/Pre-Amp Circuit Diagram

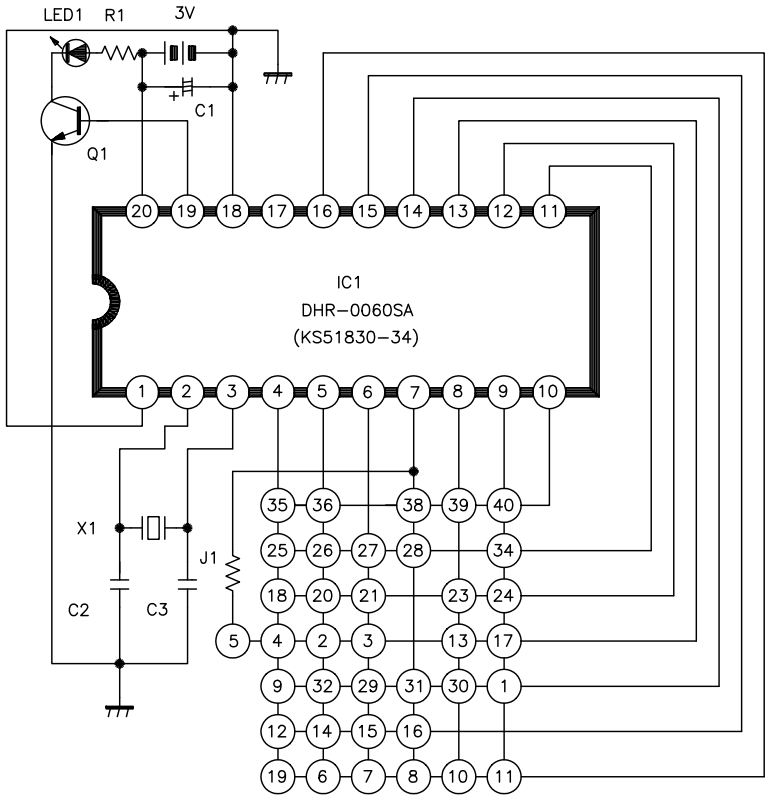


9-9. Video/Audio Circuit Diagram

VIDEO/AUDIO CIRCUIT DIAGRAM



9-10. Remocon Circuit Diagram



IC	DHR-0060SA(KS51830-34)
X1	ZTB-455ET4,KBR-455BK85L
Q1	2SD1781KY,KTC3265Y,KSC3265
LED1	HI-1520A
R1	1/10W 2.0 Ohm
J1	1/10W 0.0 Ohm
C1	10V/47uF
C2,C3	50V/100pF

* J1:VCR PLUS OPTION

ON : VCR PLUS OPERATE
OFF : VCR PLUS NOT OPERATE

KEY DATA

NO.	KEY NAME	CUSTOM CODE	DATA CODE	NO.	KEY NAME	CUSTOM CODE	DATA CODE
K01	POWER(STAND BY)	15 H	15 H	K20	→	15 H	35 H
K02	←	15 H	31 H	K21	T.R(TAPE REMAIN)	15 H	1C H
K03	PR-	15 H	18 H	K23	◕/⊙⊙ (CLK/CNT)	15 H	1D H
K04	PR+	15 H	17 H	K24	TIME(CNT RESET)	15 H	37 H
K05	VCR PLUS/SHOW VIEW	15 H	39 H	K25	● (REC)	15 H	12 H
K06	1	15 H	01 H	K26	SP / LP	15 H	1B H
K07	2	15 H	02 H	K27	AV(INPUT)	15 H	36 H
K08	3	15 H	03 H	K28	EJECT	15 H	21 H
K09	OK	15 H	29 H	K29	▶ (PLAY)	15 H	0E H
K10	4	15 H	04 H	K30	≪ (REW)	15 H	10 H
K11	5	15 H	05 H	K31	≫ (FF)	15 H	0F H
K12	6	15 H	06 H	K32	■ (STOP)	15 H	0D H
K13	MENU	15 H	22 H	K34	PAL/SECAM	15 H	1F H
K14	7	15 H	07 H	K35	▶▮ (SLOW)	15 H	13 H
K15	8	15 H	08 H	K36	|| (PAUSE)	15 H	11 H
K16	9	15 H	09 H	K38	INDEX -	15 H	3F H
K17	TV / VCR	15 H	16 H	K39	→Ø← (GOTO Ø)	15 H	0A H
K18	A.SEL	15 H	1A H	K40	INDEX +	15 H	33 H
K19	0	15 H	00 H				

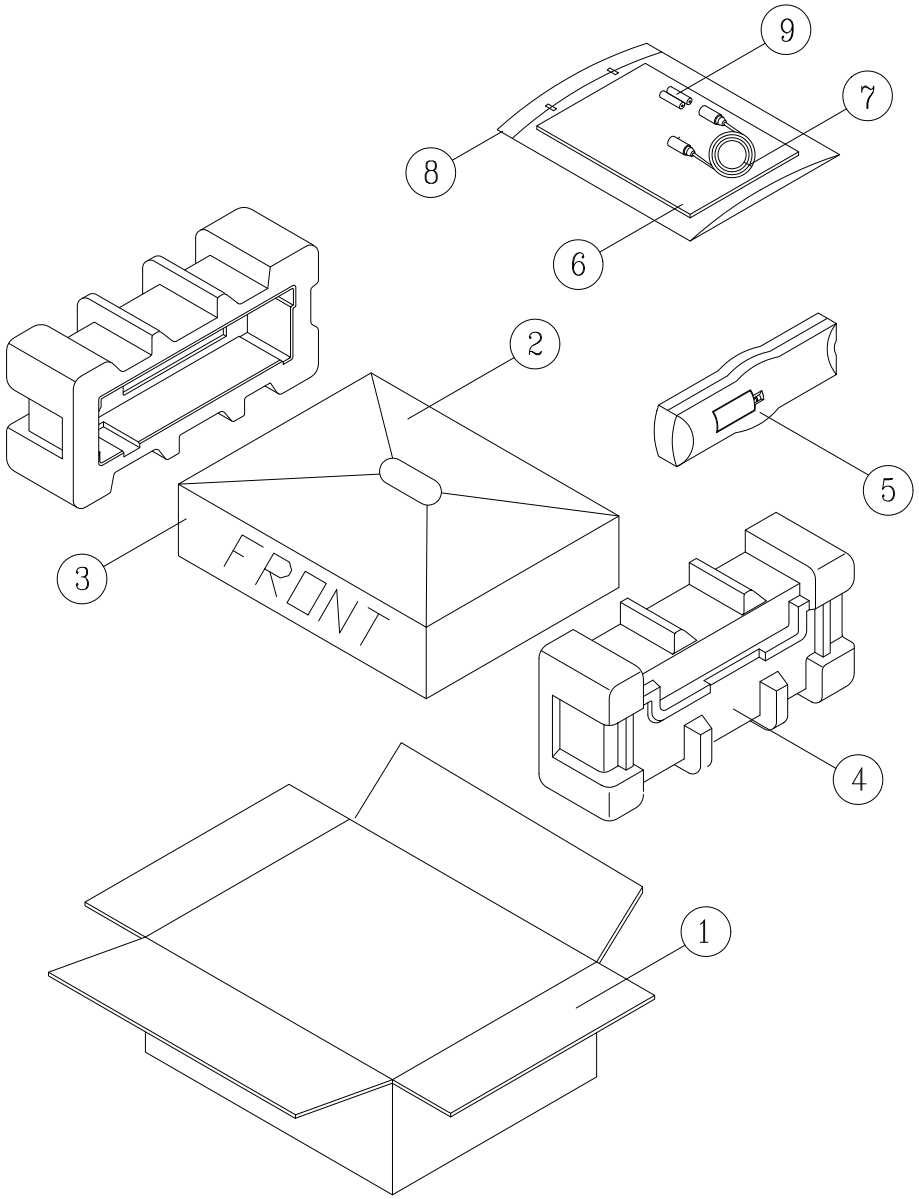
10-1. PCB Main

10-3. PCB Logic

DV-K8K*f*S Series

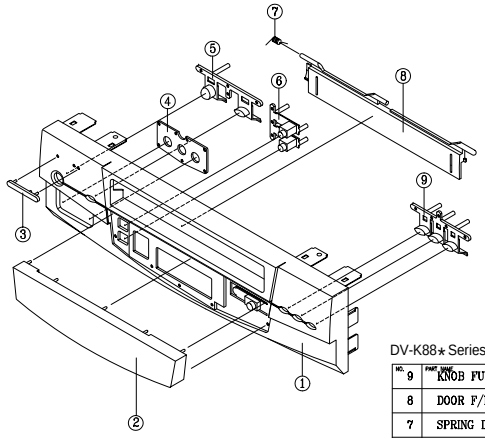
DV-K86*f*S Series (DV-K82*f*S Series)

11-1. Packing Ass'y



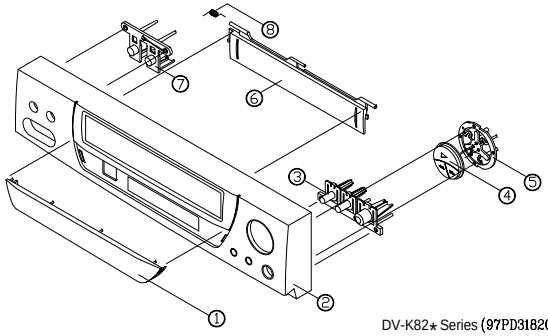
NO.	PART NAME	PART NO.	QUANTITY	MATERIAL	REMARK
9	BATTERY	486A716200	2	AAA	
8	COVER ACCESSORY	97P0424100	1	LD-PE T0.1	
7	CABLE RF	97P880RP15	1	PAL 1.5M	
6	MANUAL OWNERS	97P9560000	1	DV-K884D	
5	REMOCON HANDSET AS	97P1R2GAB0	1	VR-F2GA	
4	PAD LEFT/RIGHT	97P4924600	1	E.P.S	DV-K82※ DV-K8K※ : 97P4923200
3	POLY BACK FOR SET	97P4803100	1	PE FOAM	
2	SET TOTAL AS	DV-K884D	1		
1	CARTON BOX	97P5043800	1	A-1,SW-4	

11-2. Front Panel Assembly



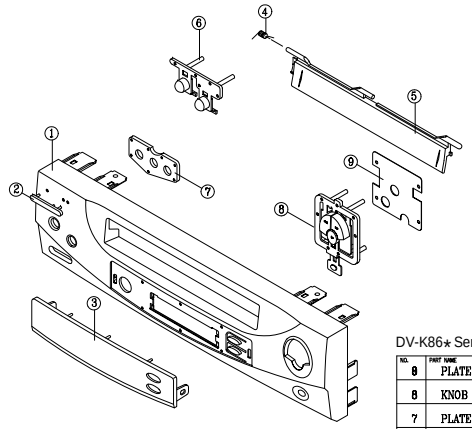
DV-K88★ Series (97PD317201)

NO.	PART NAME	PART NO.	QUANTITY	MATERIAL	REMARK
9	KNOB FUNCTION	97P1353700		ABS	
8	DOOR F/L	97P1819500	1	ABS	
7	SPRING DOOR F/L	97P3033600	1	SWPB 5088N	
6	KNOB CHANNEL	97P1353600	1	ABS	
5	KNOB S/E	97P1353500	1	ABS	
4	PLATE A/V	97P0978100	1	HI-PS	
3	BADGE DAEWOO	97P1502800	1	AL	SILVER
2	WINDOW FRONT	97P1619900	1	PMMA	
1	PANEL FRONT	97P0317201	1	HI-PS(HB)	



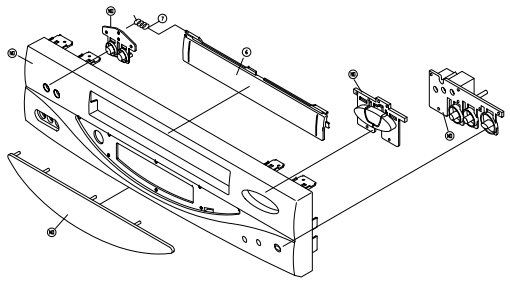
DV-K82★ Series (97PD318203)

NO.	PART NAME	PART NO.	QUANTITY	MATERIAL	REMARK
8	SPRING F/L DOOR	97P3038000	1	SWPB 5088	
7	KNOB S/EJECT	97P1356600	1	ABS780(95107)	
6	DOOR F/L	97P1820500	1	ABS780	
5	HOLDER KNOB	97P2341600	1	ABS780(95107)	
4	KNOB FUNCTION	97P1356800	1	ABS780(95107)	
3	KNOB CH/REC	97P1356700	1	ABS780(95107)	
2	PANEL FRONT	97P0318201	1	HI-PS(HB)	CHANGE CORE : ■
1	WINDOW FRONT	97P1621400	1	PMMA(41791)	



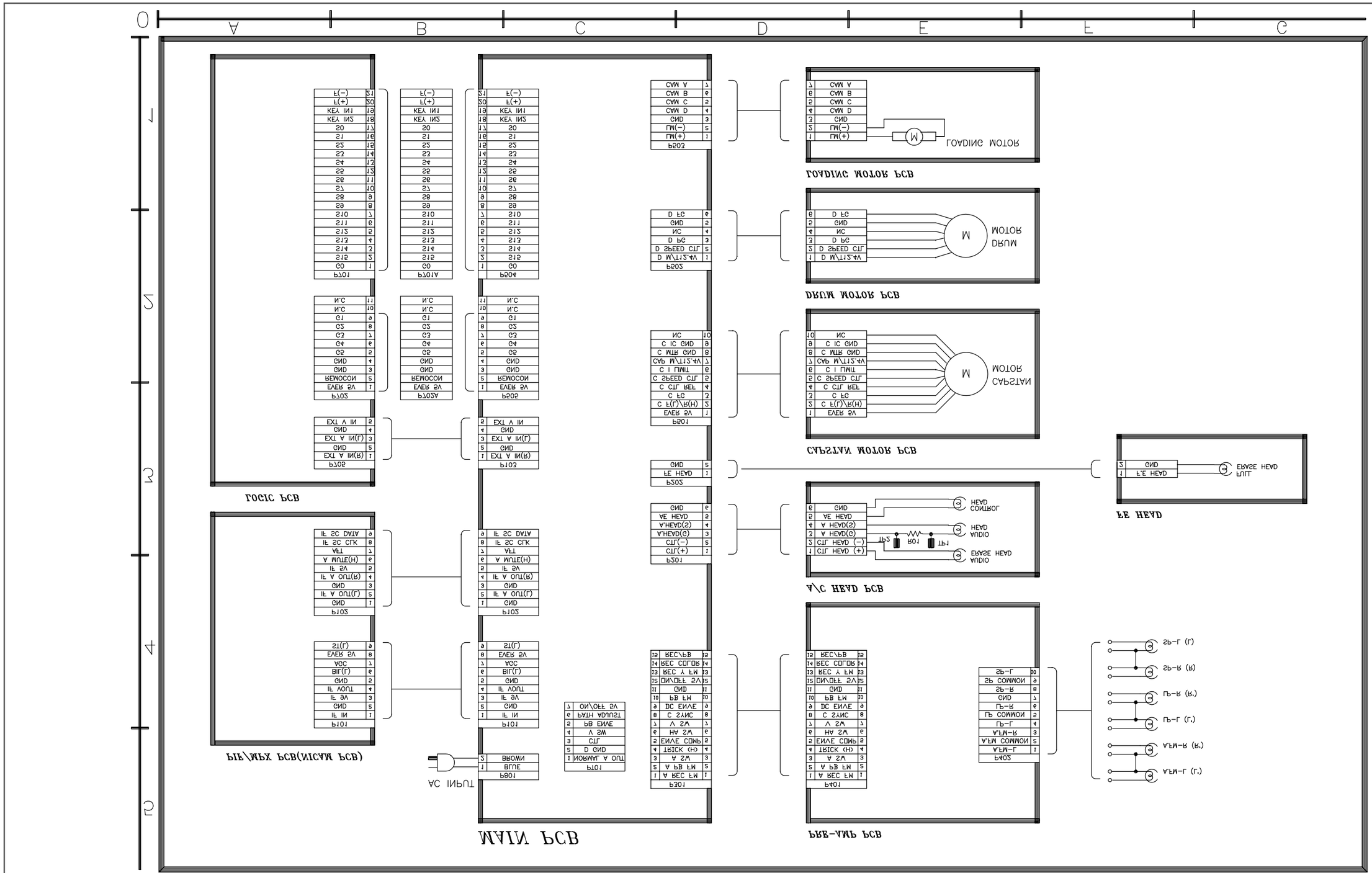
DV-K86★ Series (97PD318001)

NO.	PART NAME	PART NO.	QUANTITY	MATERIAL	REMARK
9	PLATE EARTH A	97P0978200	1	PVC T0.5	
8	KNOB FUNCTION	97P1356200	1	ABS	
7	PLATE AV	97P0978100	1	HI-PS(HB)	
6	KNOB S/E	97P1356000	1	ABS	
5	DOOR F/L	97P1820300	1	ABS	
4	SPRING DOOR F/L	97P3033600	1	SWPB 5088N	
3	WINDOW FRONT	97P1621200	1	PMMA	
2	BADGE DAEWOO	97P1508500	1	AL	SILVER
1	PANEL FRONT	97P0318001	1	HI-PS(HB)	



DV-K8K★ Series (97PD318100)

NO.	LOCATION NO.	PART NAME	PART NO.	QUANTITY	MATERIAL	REMARK
7	B008	SPRING F/L DOOR	97P3040000	1	SWPB	
6	B007	DOOR F/L	97P1820000	1	ABS	
5	B005	KNOB FUNCTION	97P1355100	1	ABS	
4	B004	KNOB CH/REC	97P1355300	1	ABS	
3	B003	KNOB P/EJECT	97P1355200	1	ABS	
2	B002	WINDOW FRONT	97P1620600	1	PMMA	
1	B001	PANEL FRONT	97P0318100	1	HI-PS(HB)	


A
B
C
D
E
F
G
1
2
3
4
5
LOADING MOTOR PCB
DRUM MOTOR PCB
CAPSTAN MOTOR PCB
LOGIC PCB
A\C HEAD PCB
FE HEAD
PIN\MAX PCB(MICOM PCB)
MAIN PCB
AC INPUT
PRE-AMP PCB
CONNECTION DIAGRAM

11-3. Instrument Disassembly

1. TOP COVER REMOVAL (FIG. 1)

1) Remove five (5) screws holding the top cover.
2) Carefully lift the back of the top cover and slide to the rear to remove.

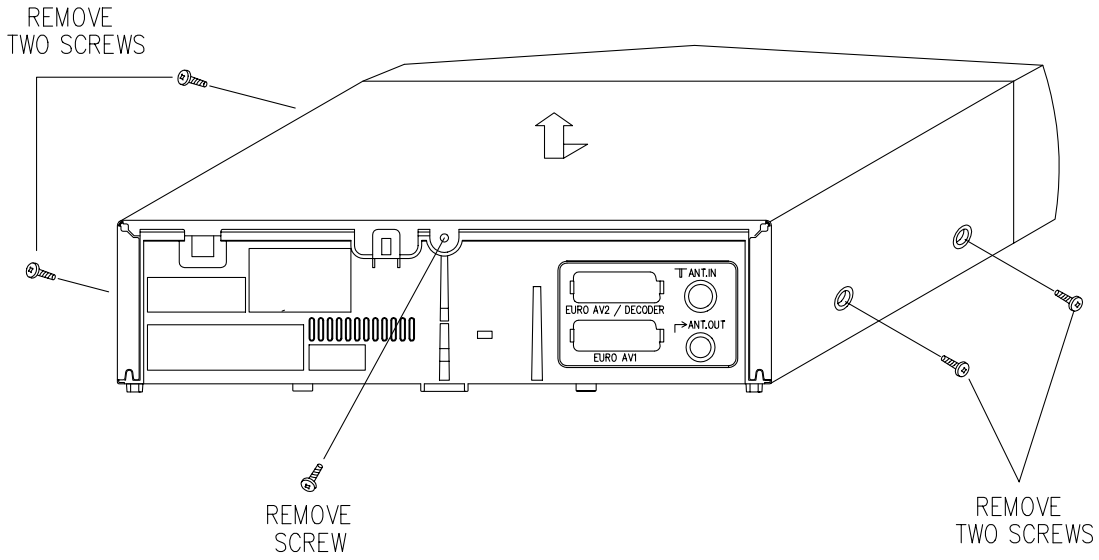
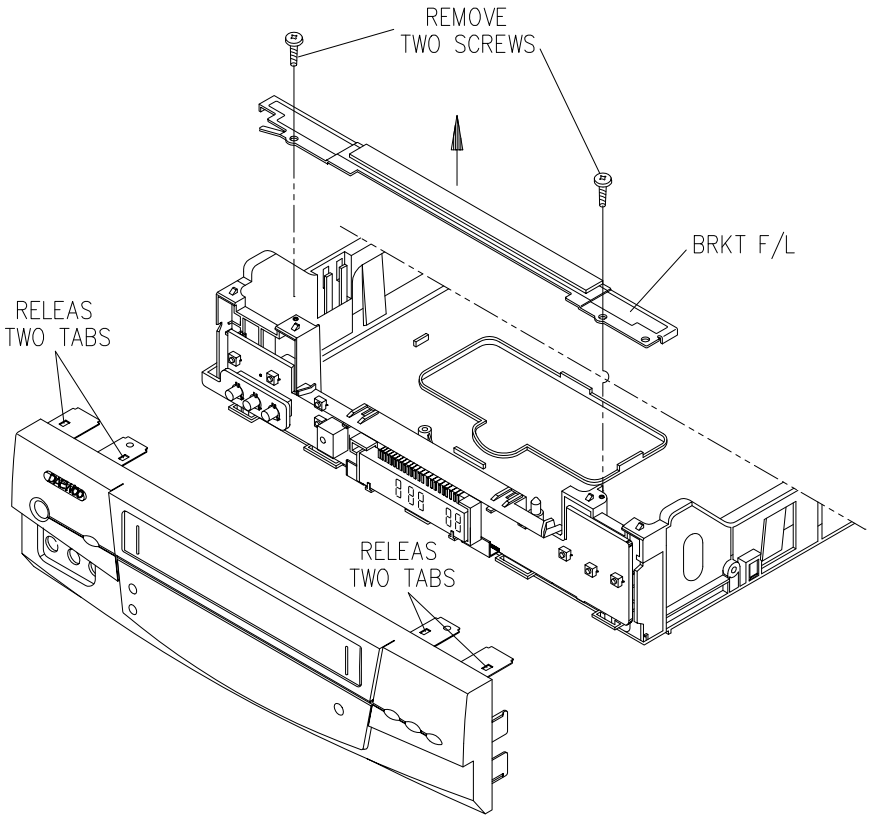


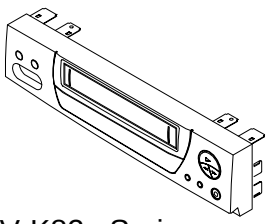
FIG. 1

2. FRONT PANEL REMOVAL (FIG. 2)

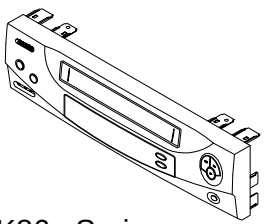
1) Remove the top cover.
2) Remove two (2) screws securing front panel.
3) Remove the F/L bracket.
4) Release seven (7) tabs holding the front panel.
5) Remove the front panel.



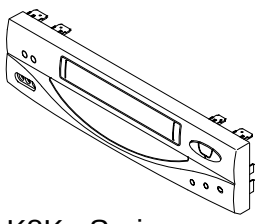
DV-K88⋆ Series



DV-K82⋆ Series



DV-K86⋆ Series



DV-K8K⋆ Series

FIG. 2

3. BOTTOM COVER REMOVAL (FIG. 3)

1) Remove the top cover and front panel.
2) Remove three (3) screws.
3) Release four (4) tabs and lift out the bottom cover.

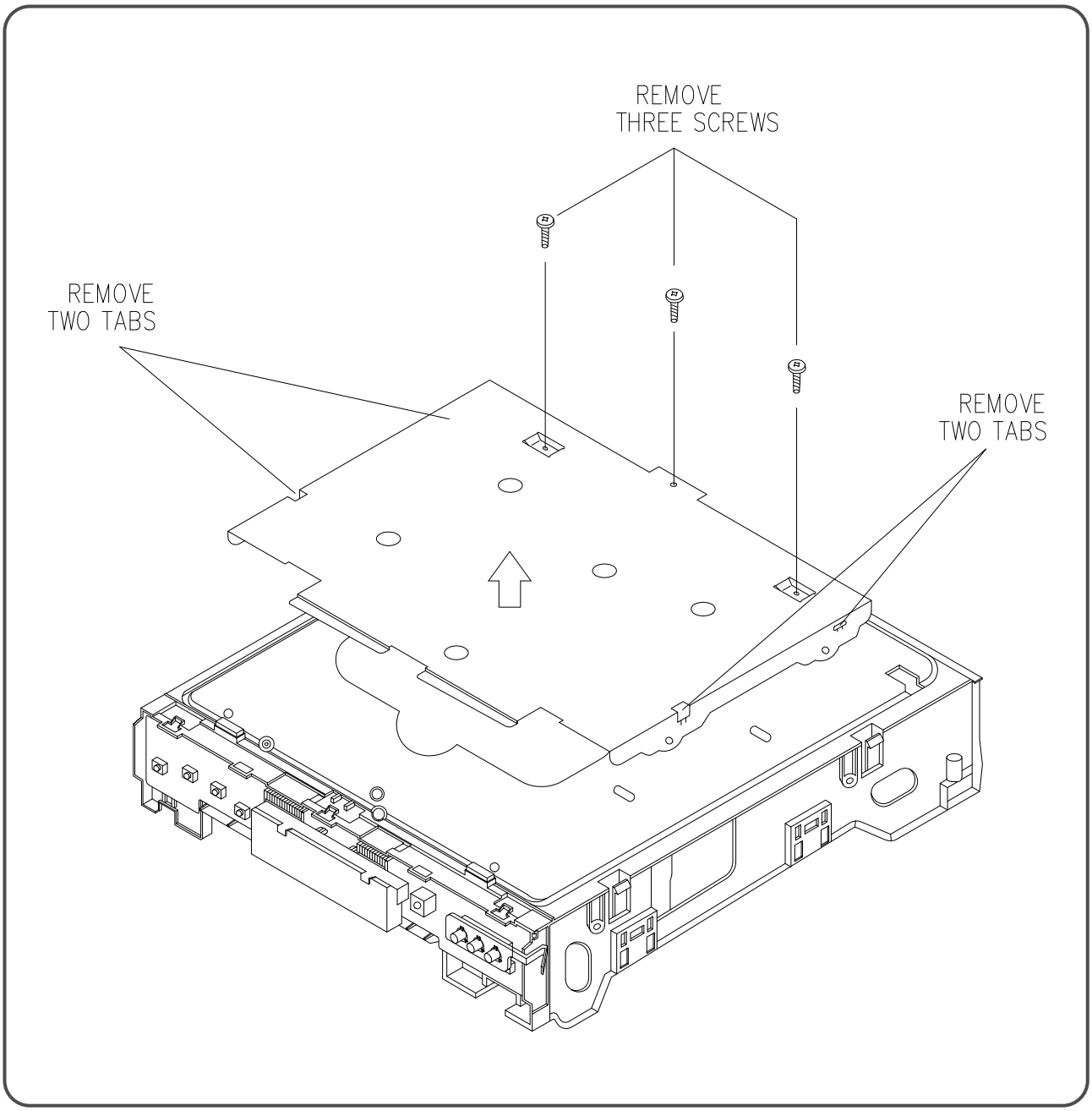


FIG. 3

4. F/L DOOR REMOVAL (FIG. 4)

1) Open the F/L door 90˚.
2) Remove the F/L door in the direction of arrow.

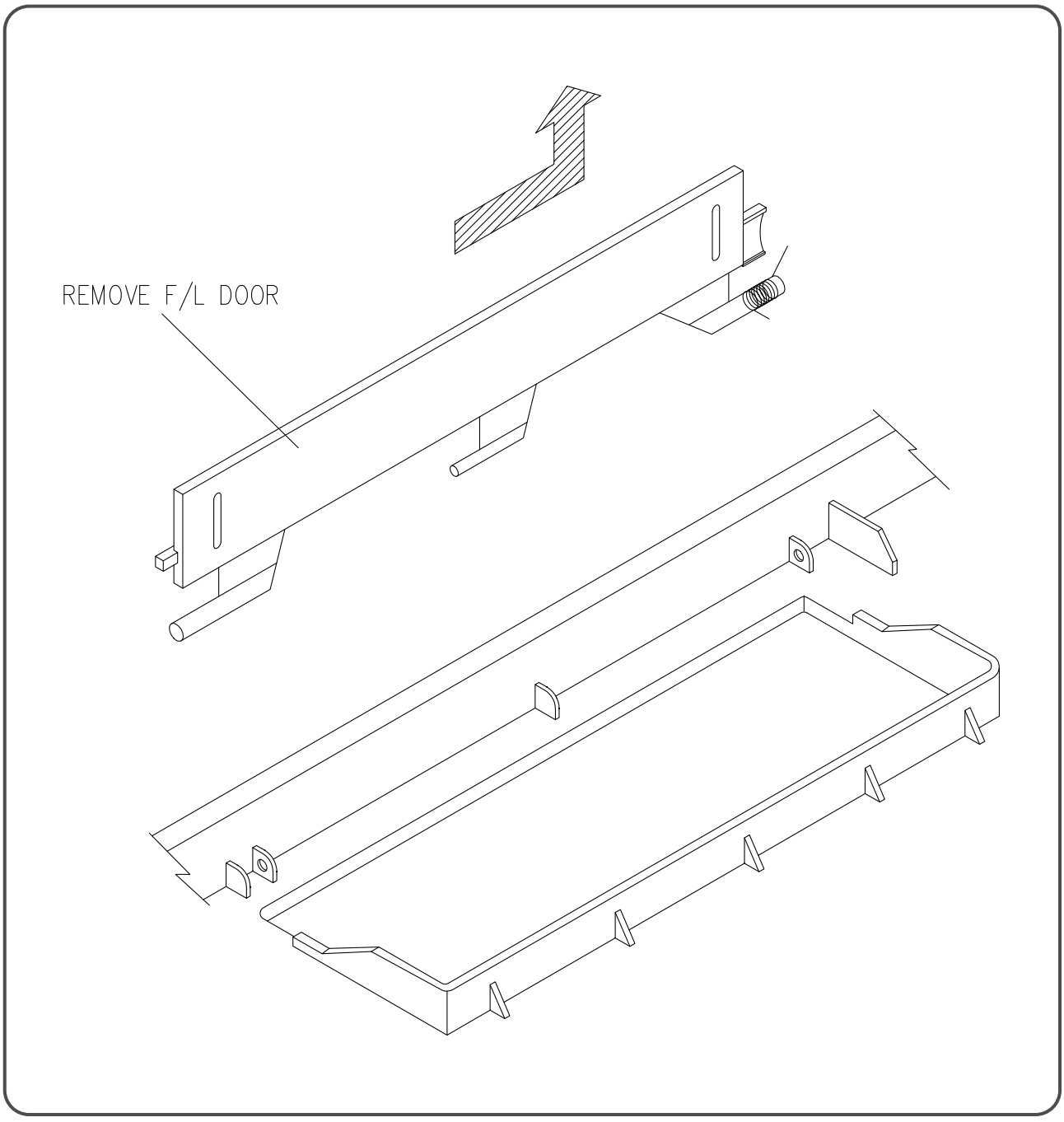
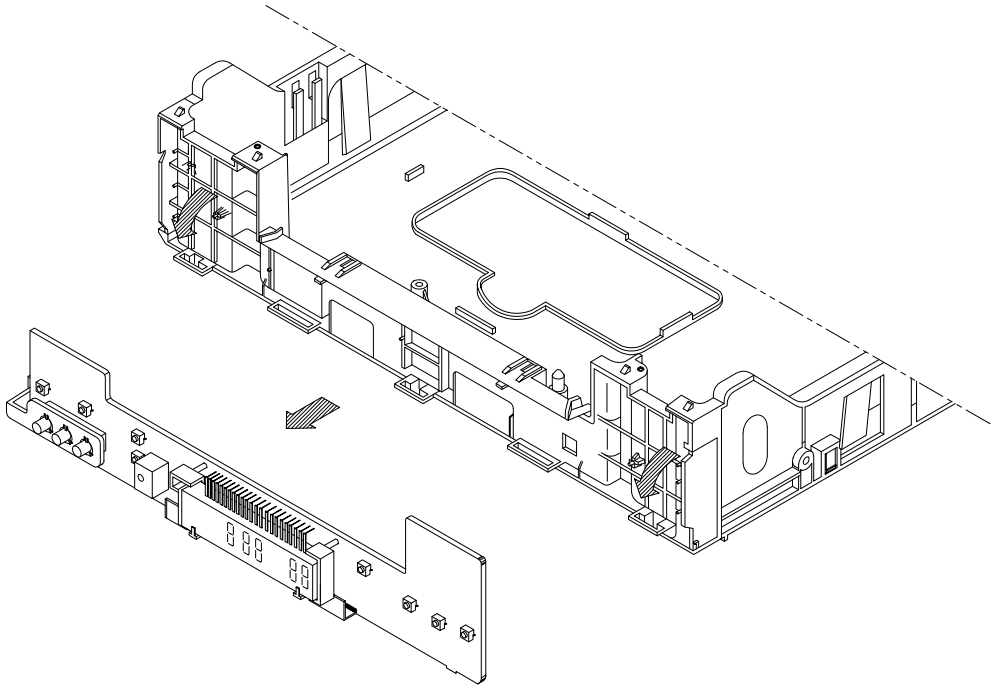


FIG. 4

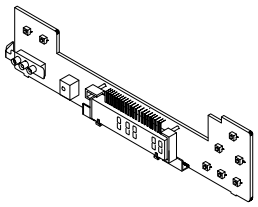
5. PCB LOGIC AS REMOVAL (FIG. 5)

2) Release two (2) tabs holding the PCB Logic AS.

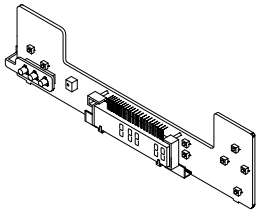
3) Tilt PCB Logic AS forward to remove in the direction of arrow.



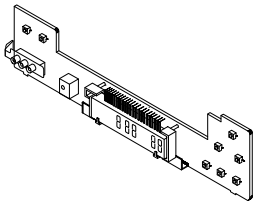
DV-K88⋆ Series



DV-K82⋆ Series



DV-K86⋆ Series



DV-K8K⋆ Series

FIG. 5

6. COVER PRE-AMP/DECK AS REMOVAL (FIG. 6)

1) Remove the top cover, bottom cover and front panel.
2) Remove five (5) screws.
3) Pull out the DECK AS and COVER PRE-AMP in the direction of arrow.

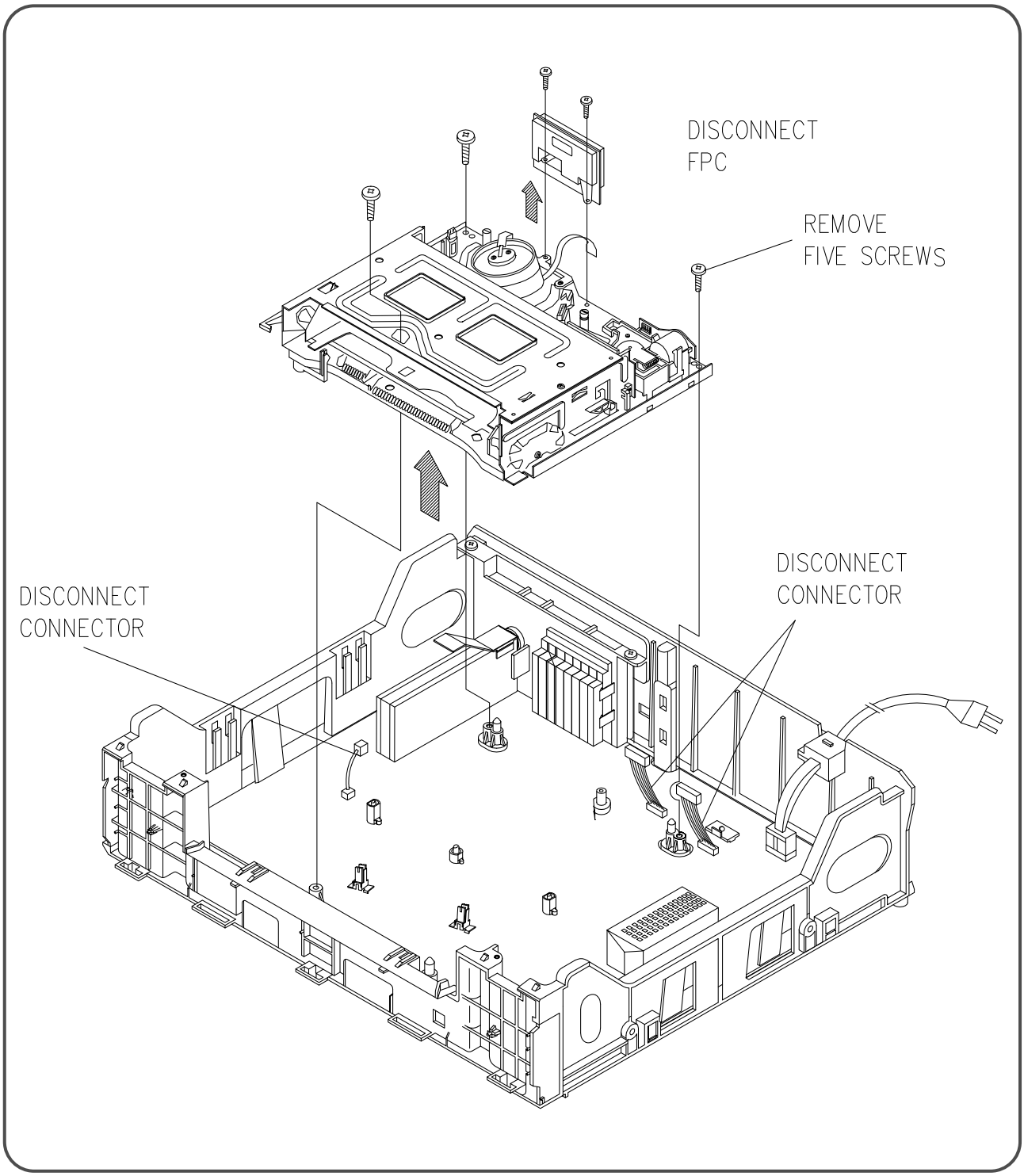


FIG. 6

7. PCB MAIN AS REMOVAL (FIG. 7)

1) Remove two (2) screws.
2) Release three (3) tabs and lift out the main PCB in the direction of the arrow.

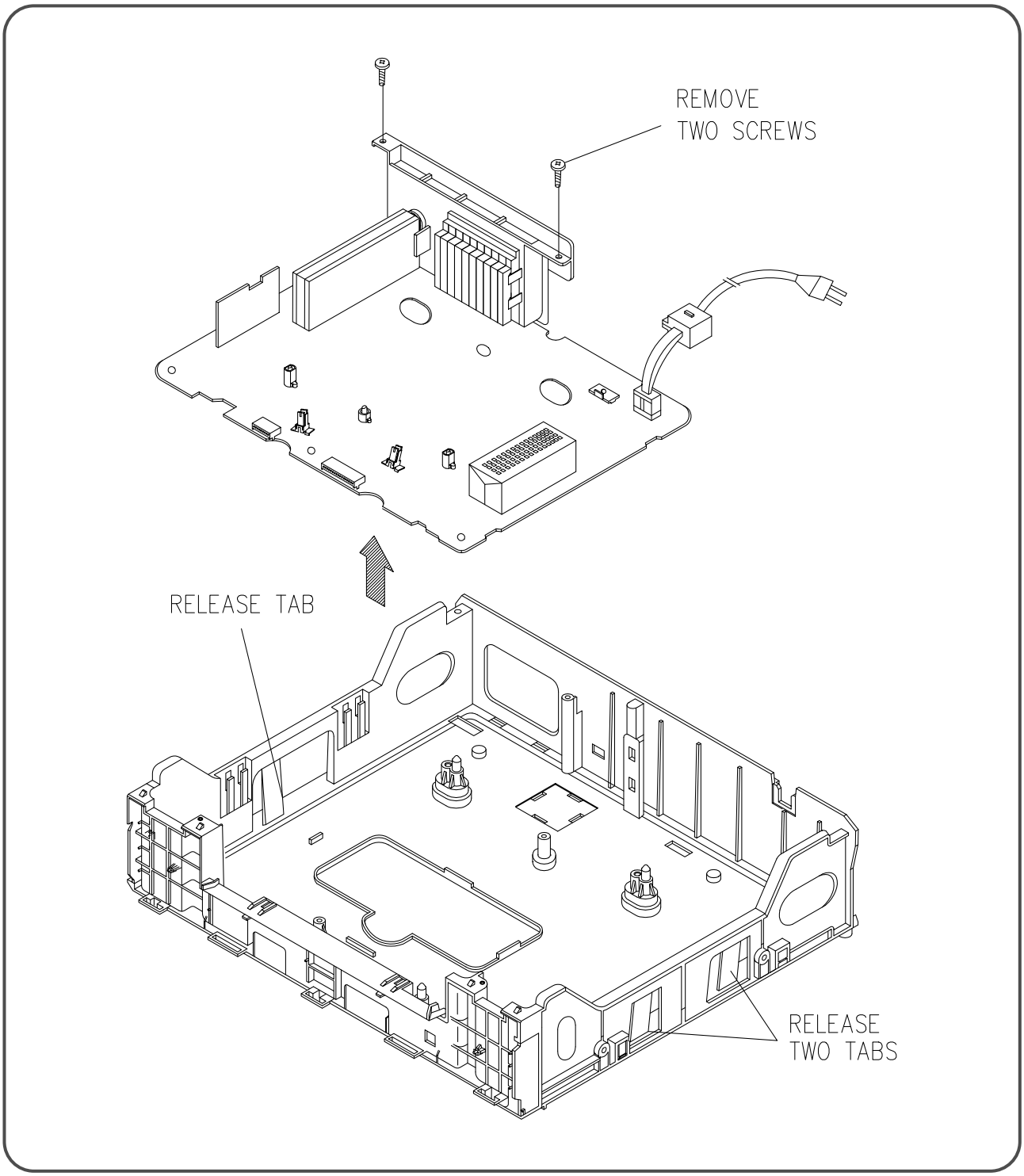


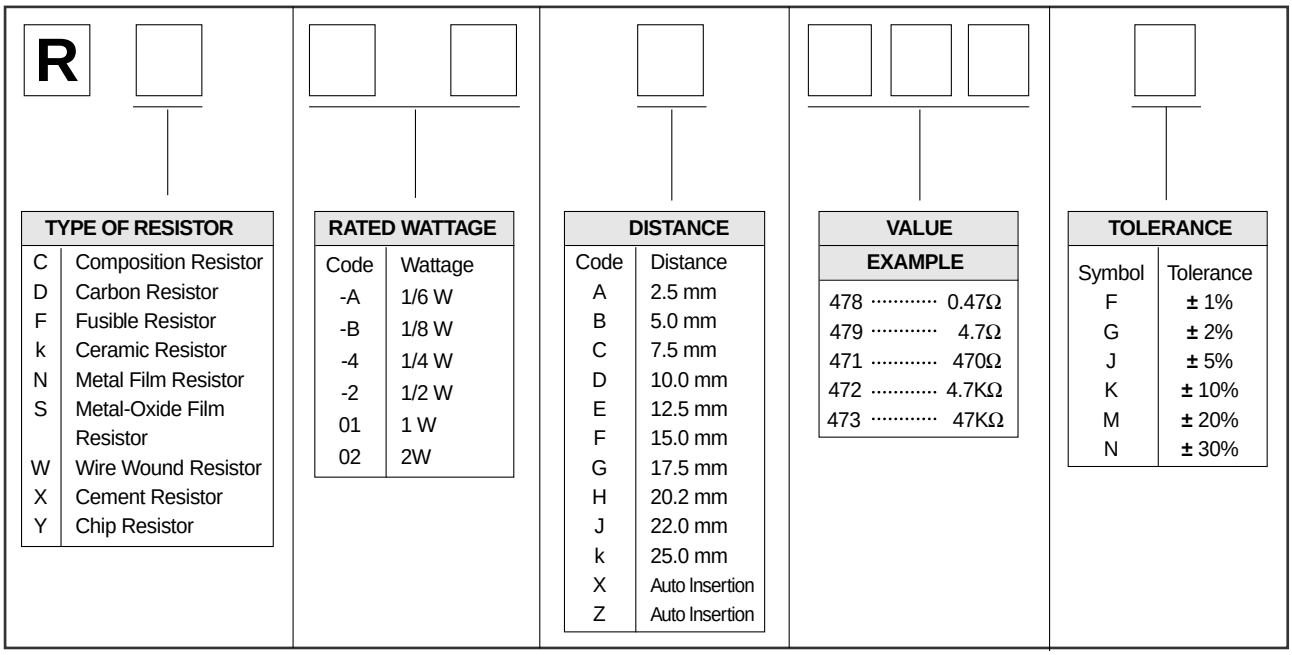
FIG. 7

SECTION 12. ELECTRICAL PARTS LIST

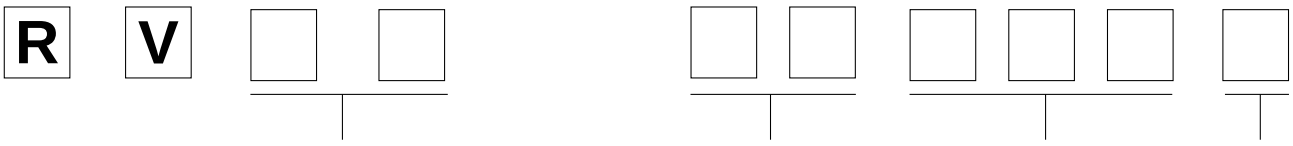
12-1. Standard Parts Number Coding

Resistor Coding

1. FIXED RESISTOR CODING



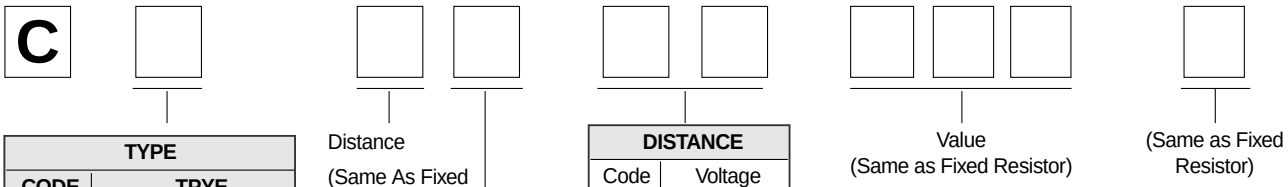
2. SEMI-FIXED RESISTOR CONDING



METERIAL		SHAPE	KNOB		CODE
CARBON FILM	1	VERTICAL	WITH	1	11
			WITHOUT	2	12
		HORIZONTAL	WITH	3	13
			WITHOUT	4	14
METAL GRAZE	5	VERTICAL	WITH	1	21
			WITHOUT	2	22
		HORIZONTAL	WITH	3	23
			WITHOUT	4	24
CARBON SOLID	5	VERTICAL	WITH	1	51
			WITHOUT	2	52
		HORIZONTAL	WITH	3	53
			WITHOUT	4	54
CERMIET	6	VERTICAL	WITH	1	61
			WITHOUT	2	62
		HORIZONTAL	WITH	3	63
			WITHOUT	4	64

Capacitor Coding

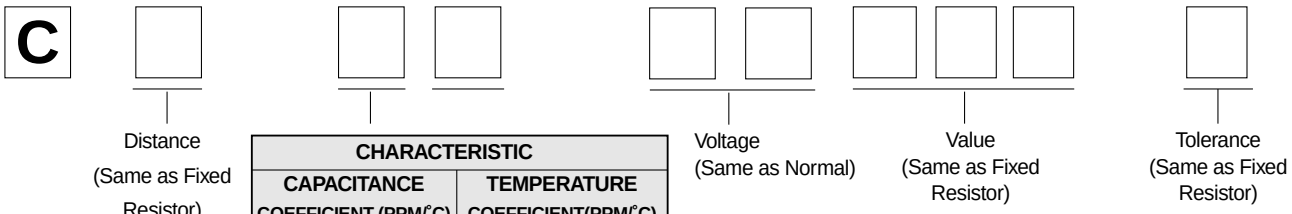
1. NORMAL



TYPE	
CODE	TPYE
A	Aluminum
B	Barrier Layer
C	Ceramic
E	Electrolytic
L	Line Across
M	Mylar
S	Styrol
N	Metalized Polyester
Q	Mica
	Oil
T	Tantal

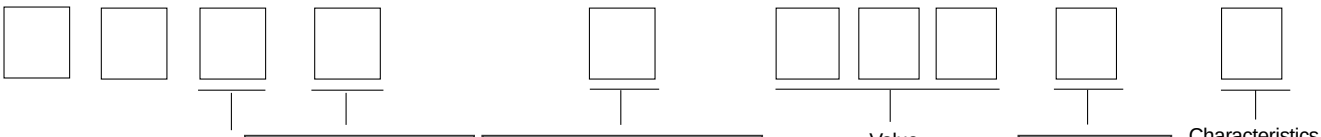
DISTANCE	
Code	Voltage
0J	6.3V
1A	10V
1C	16V
1D	20V
1E	25V
1V	35V
1G	40V
1H	50V
1J	63J
2A	100V
2B	125V
2C	160V
2D	200V
2E	250V

2. TEMPERATURE COMPENSATION



CHARACTERISTIC			
CAPACITANCE COEFFICIENT (PPM/˚C)		TEMPERATURE COEFFICIENT(PPM/˚C)	
A	+100	F	± 15
B	+30	G	± 30
C	0	H	± 60
H	-30	J	± 120
L	-80	K	± 250
P	-150	L	± 500
R	-220	M	± 1000
S	-330	N	± 2500
T	-470		
U	-750		
V	-1000		
SI	+350~ -1000		

Fuse Coding



TYPE	
F	Fiber
G	Glass Tube
L	Lead Type
	Glass Tube
T	Temperature
W	Wire
C	Ceramic
P	Plastic

SIZE		
A	MF41	4.6 x 16
B	MF51	5.2 x 20
C	MF60	6.3 x 30
D	MF61	6.3 x 31.8
E	MF01	10.3 x 38.1
F	MF04	14.3 x 50.8
G	MF05	20.5 x 76.2

VOLTAGE	
1	AC125V
2	AC250V
3	125/250V

PCB Main AS

LOC	PART CODE	PART NAME	PART DESCRIPTION
23	97PD183900	PCB MAIN AS	DV-K884DY-AQ
*B001B	97P0974800	PLATE EARTH TMI	SUS304 CSP T0.2
C801	CL1UE3104M	C LINE ACROSS	AC275V 0.1MF M 1.40 WORLD
C804	CH1CEE472M	C CERA AC	2.5KV 4700PF M DE AC250V
C805	CH1CFB101K	C CERA AC	4.0KV 100PF K DG AC250V
*C807	CEXF2G470V	C ELECTRO	400V RSS 47MF 16X25
C812	CEXF1E331F	C ELECTRO	25V RX 330MF 10X20
C813	CEXF1A102F	C ELECTRO	10V RX 1000MF 10X20
D503	DS1R481T--	LED IR	SIR-48IT
D503A	97P2339600	HOLDER IR	ABS
D801	DS1WBA60--	DIODE BRIDGE	S1WBA60
*F01	97P6900910	CORD POWER AS	KKP-419C+BS201R+2.36
F01A	97P2316600	HOLDER AC CORD	NYLON 66 (VCR-63DA) BL
F801	5FSCB2022L	FUSE CERA	SEMKO T2AH 250V MF51
IC001	12BKK8W5ML	IC OSD	LC74763-9650 (K8W5ML)
*IC051	12HV5649--	IC VPS (PDC)	SDA5649
IC502	1BA6209---	IC	BA6209(ROHM)
IC503	124LC08B--	IC MEMORY	24LC08B
IC505	1MC4558C--	IC OP AMP	MC4558C(KA4558)
IC602	1LA7152---	IC SWITCH	LA7152
*JK601	97P6313300	JACK DOUBLE SCART	DSAM-9621
L801	5PLFSQ2014	FILTER LINE	SQ-2014 40MH
L802	5PLFSQ2014	FILTER LINE	SQ-2014 40MH
*M601	97P0717000	BOARD ANT SCART 2	HI-PS(HB)
M802	97P0974300	PLATE EARTH-P	ET T=0.4
PT01	97P6269100	CONN WAFER	00-8283-0712-00000
P101	97P62M06A9	CONN WAFER	35337 PLUG 2.5MM 9P
P102	97P62M06A9	CONN WAFER	35337 PLUG 2.5MM 9P
P103	97P8811516	CONN AS	5H-5S 160MM
P201	97P8811614	CONN AS	6H-6S 140MM SHIELD
P202	97P8851210	CONN AS (Y51210)	2H-2S 100MM
P301	97P62G02BF	CONN B/B	GB200 PLUG 2.0MM 15P
P501	97P62T112A	CONN B/B (PLUG)	TKC-GP PLUG 10P
P502	97P62T1126	CONN B/B (PLUG)	TKC-GP PLUG 6P
P503	97P8810712	CONN AS (Y10712)	7H-7S, 120MM
P504	97P62G05CM	CONN HOUSING2	GB150 RECEP 1.5MM 21P
P505	97P62G05CB	CONN HOUSING2	GB150 RECEP 1.5MM 11P
P801	97P62Y02X2	CONN WAFER	YFW800 STR 10MM 2P
RF102	97P7608300	TUNER 2 IN 1	ALTM-BG1
R599	RS02Y399J-	R M-OXIDE FILM	2W 3.9 OHM J
R803	RW02B229J-	R WIRE WOUND	2W 2.2 OHM J
R811	RS01F621J-	R CARBON FILM	1W 620 OHM J
SW501	5S70101059	SW MICRO	SPPB62
S501	TST5811---	TR PHOTO	ST-5811(D-RANK)
S501A	97P2338200	HOLDER TR	ABS
S502	TST5811---	TR PHOTO	ST-5811(D-RANK)
S502A	97P2338200	HOLDER TR	ABS
S503	97P0S01800	SENSOR REEL	SG-239S
S504	97P0S01800	SENSOR REEL	SG-239S

LOC	PART CODE	PART NAME	PART DESCRIPTION
T201	560202L692	COIL OSC	DEO-006
X301	5XE4R4336B	CRYSTAL QUARTZ	HC-49/U 4.433619MHZ 15PPM
X502	5XZR03276G	CRYSTAL QUARTZ	SO-26 32.768000KHZ 10PPM
31	97PB227600	PCB MAIN CHIP AS	DV-K884DY-AQ
C001	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C003	HCQK240JCA	C CHIP CERA	50V CH 24PF J 2012
C004	HCQK240JCA	C CHIP CERA	50V CH 24PF J 2012
C005	HCFK223ZCA	C CHIP CERA	50V Y5V 0.022MF Z 2012
C006	HCBK682KCA	C CHIP CERA	50V X7R 6800PF K 2012
C009	HCLK201JCA	C CHIP CERA	50V SL 200PF J 2012
C010	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C013	HCLK221JCA	C CHIP CERA	50V SL 220PF J 2012
C014	HCLK221JCA	C CHIP CERA	50V SL 220PF J 2012
C015	HCLK221JCA	C CHIP CERA	50V SL 220PF J 2012
C016	HCQK220JCA	C CHIP CERA	50V CH 22PF J 2012
C017	HCQK240JCA	C CHIP CERA	50V CH 24PF J 2012
C018	HCLK560JCA	C CHIP CERA	50V SL 56PF J 2012
*C053	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
*C054	HCBK222KCA	C CHIP CERA	50V X7R 2200PF K 2012
*C055	HCFK333ZCA	C CHIP CERA	Y5V 50V 0.033MF Z 2012
C171	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C172	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C173	HCLK101JCA	C CHIP CERA	50V SL 100PF J 2012
C175	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C177	HCLK101JCA	C CHIP CERA	50V SL 100PF J 2012
C184	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C187	HCLK471JCA	C CHIP CERA	50V SL 470PF J 2012
C204	HCBK182KCA	C CHIP CERA	50V X7R 1800PF K 2012
C205	HCBK472KCA	C CHIP CERA	50V X7R 4700PF K 2012
C206	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C209	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C218	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C220	HCBK182KCA	C CHIP CERA	50V X7R 1800PF K 2012
C221	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C271	HCLK101JCA	C CHIP CERA	50V SL 100PF J 2012
C272	HCLK101JCA	C CHIP CERA	50V SL 100PF J 2012
C273	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C274	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C280	HCLK391JCA	C CHIP CERA	50V SL 390PF J 2012
C281	HCBK682KCA	C CHIP CERA	50V X7R 6800PF K 2012
C282	HCBK682KCA	C CHIP CERA	50V X7R 6800PF K 2012
C302	HCBK473KCA	C CHIP CERA	50V X7R 0.047MF K 2012
C306	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C307	HCLK509CCA	C CHIP CERA	50V SL 5PF C 2012
C308	HCLK270JCA	C CHIP CERA	50V SL 27PF J 2012
C310	HCLK220JCA	C CHIP CERA	50V SL 22PF J 2012
C311	HCLK391JCA	C CHIP CERA	50V SL 390PF J 2012
C312	HCLK201JCA	C CHIP CERA	50V SL 200PF J 2012
C313	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012

LOC	PART CODE	PART NAME	PART DESCRIPTION
C314	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C319	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C323	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C328	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C329	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C332	HCFK223ZCA	C CHIP CERA	50V Y5V 0.022MF Z 2012
C335	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C336	HCBK473KCA	C CHIP CERA	50V X7R 0.047MF K 2012
C338	HCBK473KCA	C CHIP CERA	50V X7R 0.047MF K 2012
C344	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C345	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C347	HCLK101JCA	C CHIP CERA	50V SL 100PF J 2012
C348	HCLK101JCA	C CHIP CERA	50V SL 100PF J 2012
C350	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C355	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C357	HCLK680JCA	C CHIP CERA	50V SL 68PF J 2012
C358	HCLK680JCA	C CHIP CERA	50V SL 68PF J 2012
C502	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C503	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C506	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C508	HCQK180JCA	C CHIP CERA	50V CH 18PF J 2012
C509	HCQK180JCA	C CHIP CERA	50V CH 18PF J 2012
C510	HCQK220JCA	C CHIP CERA	50V CH 22PF J 2012
C511	HCQK220JCA	C CHIP CERA	50V CH 22PF J 2012
C513	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C514	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012
C515	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012
C522	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C525	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C526	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C528	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C529	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C530	HCFK223ZCA	C CHIP CERA	50V Y5V 0.022MF Z 2012
C531	HCFK223ZCA	C CHIP CERA	50V Y5V 0.022MF Z 2012
C532	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C534	HCBK272KCA	C CHIP CERA	X7R 50V 2700PF K 2012
C539	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C541	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C542	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C543	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C602	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C623	HCLK561JCA	C CHIP CERA	50V SL 560PF J 2012
C624	HCLK561JCA	C CHIP CERA	50V SL 560PF J 2012
C630	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C634	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C635	HCBK222KCA	C CHIP CERA	50V X7R 2200PF K 2012
C636	HCBK222KCA	C CHIP CERA	50V X7R 2200PF K 2012
C637	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C814	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012

LOC	PART CODE	PART NAME	PART DESCRIPTION
C820	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C821	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C824	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
IC251	1BH7804K--	IC HIFI	BH7804K
IC301	1LA71511M-	IC A/V	LA71511M
IC302	1LC89977M-	IC CCD	LC89977M
*IC501	168KK8X8TS	IC MICOM	M37775M7H (K8X8TS)
IC601	1KA8119B--	IC SW	KA8119B
RJ001	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ002	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ003	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ004	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ005	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ006	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ007	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ008	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ009	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ010	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ011	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ012	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ013	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ014	HRF8000-EA	R CHIP	1/8 0 OHM 3216
*RJ015	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ016	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ017	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ018	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ019	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ021	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ022	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ023	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ026	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ027	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ028	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ030	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ033	HRF8000-EA	R CHIP	1/8 0 OHM 3216
RJ036	HRF8000-EA	R CHIP	1/8 0 OHM 3216
R001	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R002	HRFT121JCA	R CHIP	1/10 120 OHM J 2012
R003	HRFT682JCA	R CHIP	1/10 6.8K OHM J 2012
R004	HRFT152JCA	R CHIP	1/10 1.5K OHM J 2012
R005	HRFT202JCA	R CHIP	1/10 2K OHM J 2012
R008	HRFT204JCA	R CHIP	1/10 200K OHM J 2012
R015	HRFT202JCA	R CHIP	1/10 2K OHM J 2012
*R052	HRFT105JCA	R CHIP	1/10 1M OHM J 2012
*R053	HRFT104JCA	R CHIP	1/10 100K OHM J 2012
*R054	HRFT125JCA	R CHIP	1/10 1.2M OHM J 2012
*R056	HRFT125JCA	R CHIP	1/10 1.2M OHM J 2012
*R057	HRFT682JCA	R CHIP	1/10 6.8K OHM J 2012
R172	HRFT563JCA	R CHIP	1/10 56K OHM J 2012

LOC	PART CODE	PART NAME	PART DESCRIPTION
R182	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R184	HRFT303JCA	R CHIP	1/10 30K OHM J 2012
R185	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R186	HRFT183JCA	R CHIP	1/10 18K OHM J 2012
R190	HRFT563JCA	R CHIP	1/10 56K OHM J 2012
R201	HRFT334JCA	R CHIP	1/10 330K OHM J 2012
R203	HRFT153JCA	R CHIP	1/10 15K OHM J 2012
R205	HRFT681JCA	R CHIP	1/10 680 OHM J 2012
R208	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R210	HRFT470JCA	R CHIP	1/10 47 OHM J 2012
R211	HRFT152JCA	R CHIP	1/10 1.5K OHM J 2012
R212	HRFT229JCA	R CHIP	1/10 2.2 OHM J 2012
R213	HRFT229JCA	R CHIP	1/10 2.2 OHM J 2012
R215	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R216	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R217	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R221	HRFT304JCA	R CHIP	1/10 300K OHM J 2012
R222	HRFT181JCA	R CHIP	1/10 180 OHM J 2012
R224	HRFT123JCA	R CHIP	1/10 12K OHM J 2012
R225	HRFT822JCA	R CHIP	1/10 8.2K OHM J 2012
R256	HRFT273JCA	R CHIP	1/10 27K OHM J 2012
R257	HRFT273JCA	R CHIP	1/10 27K OHM J 2012
R258	HRFT473JCA	R CHIP	1/10 47K OHM J 2012
R260	HRFT392JCA	R CHIP	1/10 3.9K OHM J 2012
R262	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R263	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R278	HRFT303JCA	R CHIP	1/10 30K OHM J 2012
R279	HRFT303JCA	R CHIP	1/10 30K OHM J 2012
R280	HRFT241JCA	R CHIP	1/10 240 OHM J 2012
R281	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R301	HRFT391JCA	R CHIP	1/10 390 OHM J 2012
R302	HRFT112JCA	R CHIP	1/10 1.1K OHM J 2012
R303	HRFT391JCA	R CHIP	1/10 390 OHM J 2012
R306	HRFT272JCA	R CHIP	1/10 2.7K OHM J 2012
R308	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R309	HRFT122JCA	R CHIP	1/10 1.2K OHM J 2012
R310	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R311	HRFT822JCA	R CHIP	1/10 8.2K OHM J 2012
R312	HRFT182JCA	R CHIP	1/10 1.8K OHM J 2012
R315	HRFT302JCA	R CHIP	1/10 3K OHM J 2012
R321	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R324	HRFT183JCA	R CHIP	1/10 18K OHM J 2012
R325	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R326	HRFT202JCA	R CHIP	1/10 2K OHM J 2012
R327	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R335	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012
R336	HRFT331JCA	R CHIP	1/10 330 OHM J 2012
R501	HRT133JCA	R CHIP	1/10 13K OHM J 2012
R502	HRFT103JCA	R CHIP	1/10 10K OHM J 2012

LOC	PART CODE	PART NAME	PART DESCRIPTION
R504	HRT511JCA	R CHIP	1/10 510 OHM J 2012
R505	HRFT511JCA	R CHIP	1/10 510 OHM J 2012
R506	HRT304JCA	R CHIP	1/10 300K OHM J 2012
R510	HRFT331JCA	R CHIP	1/10 330 OHM J 2012
R511	HRFT331JCA	R CHIP	1/10 330 OHM J 2012
R512	HRFT331JCA	R CHIP	1/10 330 OHM J 2012
R515	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R518	HRFT201JCA	R CHIP	1/10 200 OHM J 2012
R519	HRFT273JCA	R CHIP	1/10 27K OHM J 2012
R521	HRFT273JCA	R CHIP	1/10 27K OHM J 2012
R526	HRFT912JCA	R CHIP	1/10 9.1K OHM J 2012
R527	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R528	HRFT473JCA	R CHIP	1/10 47K OHM J 2012
R529	HRFT752JCA	R CHIP	1/10 7.5K OHM J 2012
R531	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R532	HRFT221JCA	R CHIP	1/10 220 OHM J 2012
R533	HRFT752JCA	R CHIP	1/10 7.5K OHM J 2012
R534	HRFT105JCA	R CHIP	1/10 1M OHM J 2012
R541	HRFT105JCA	R CHIP	1/10 1M OHM J 2012
R544	HRFT104JCA	R CHIP	1/10 100K OHM J 2012
R546	HRFT473JCA	R CHIP	1/10 47K OHM J 2012
R547	HRFT473JCA	R CHIP	1/10 47K OHM J 2012
R548	HRFT101JCA	R CHIP	1/10 100 OHM J 2012
R549	HRFT101JCA	R CHIP	1/10 100 OHM J 2012
R550	HRFT332JCA	R CHIP	1/10 3.3K OHM J 2012
R551	HRFT474JCA	R CHIP	1/10 470K OHM J 2012
R552	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R563	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R565	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R566	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R572	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R573	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R574	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R580	HRFT473JCA	R CHIP	1/10 47K OHM J 2012
R581	HRFT473JCA	R CHIP	1/10 47K OHM J 2012
R588	HRFT393JCA	R CHIP	1/10 39K OHM J 2012
R601	HRFT151JCA	R CHIP	1/10 150 OHM J 2012
R602	HRFT151JCA	R CHIP	1/10 150 OHM J 2012
R611	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R613	HRFT750JCA	R CHIP	1/10 75 OHM J 2012
R617	HRFT750JCA	R CHIP	1/10 75 OHM J 2012
R618	HRFT750JCA	R CHIP	1/10 75 OHM J 2012
R623	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R625	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R626	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R627	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R628	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R629	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R630	HRFT561JCA	R CHIP	1/10 560 OHM J 2012

LOC	PART CODE	PART NAME	PART DESCRIPTION
R631	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R632	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R633	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R634	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R635	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R636	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R637	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R638	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R639	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R640	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R641	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R642	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R643	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R644	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R645	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R646	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R814	HRFT303JCA	R CHIP	1/10 30K OHM J 2012
R816	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
41	97PC303800	PCB MAIN R-AUTO AS	DV-K884DY-AQ
C002	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C007	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C008	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C012	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
*C051	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C174	CEXF1H479A	C ELECTRO	50V RSM 4.7MF 4X7
C176	CEXF1E220A	C ELECTRO	25V RSM 22MF 6.3X7
C178	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C179	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C183	CEXF1A471V	C ELECTRO	10V RSS 470MF 8X11.5
C188	CMXL1J104K	C MYLAR	MEU 63V 0.1MF K
C189	CMXL1J104K	C MYLAR	MEU 63V 0.1MF K
C190	CMXL1J104K	C MYLAR	MEU 63V 0.1MF K
C201	CEXF1H479A	C ELECTRO	50V RSM 4.7MF 4X7
C203	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C207	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C208	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C210	CMXM2A103J	C MYLAR	100V 0.01MF J (TP)
C211	CMXM2A333J	C MYLAR	100V 0.033MF J (TP)
C212	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C213	CMXM2A223J	C MYLAR	100V 0.022MF J TP
C214	CMXM2A102J	C MYLAR	100V 1000PF J (TP)
C215	CMXM2A152J	C MYLAR	100V 1500PF J (TP)
C216	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C217	CEXF1H479A	C ELECTRO	50V RSM 4.7MF 4X7
C219	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C222	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C223	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C252	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C253	CMXM2A223J	C MYLAR	100V 0.022MF J TP

LOC	PART CODE	PART NAME	PART DESCRIPTION
C255	CMXM2A472J	C MYLAR	100V 4700PF J (TP)
C256	CEXF1A101A	C ELECTRO	10V RSM 100MF 6.3X7
C257	CEXF1A101A	C ELECTRO	10V RSM 100MF 6.3X7
C258	CMXM2A472J	C MYLAR	100V 4700PF J (TP)
C260	CMXM2A223J	C MYLAR	100V 0.022MF J TP
C261	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C262	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C263	CMXM2A223J	C MYLAR	100V 0.022MF J TP
C264	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C266	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C267	CEXF1A101A	C ELECTRO	10V RSM 100MF 6.3X7
C268	CEXF1A101A	C ELECTRO	10V RSM 100MF 6.3X7
C301	CEXF1H108A	C ELECTRO	50V RSM 0.1MF 4X7
C309	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C316	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C317	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C320	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C322	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C324	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C325	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C326	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C327	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C330	CEXF1A101A	C ELECTRO	10V RSM 100MF 6.3X7
C331	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C333	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C337	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C343	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C501	CDXA0H104K	C SUPER	5.5V 0.1F TAPING
C504	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP
C517	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C519	CEXF1A101A	C ELECTRO	10V RSM 100MF 6.3X7
C520	CEXF1H479A	C ELECTRO	50V RSM 4.7MF 4X7
C521	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C524	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C546	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C601	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C603	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C604	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C605	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C606	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C607	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C608	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C609	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C610	CEXF1E220A	C ELECTRO	25V RSM 22MF 6.3X7
C611	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C612	CEXF1E220A	C ELECTRO	25V RSM 22MF 6.3X7
C613	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C614	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C615	CEXF1A471V	C ELECTRO	10V RSS 470MF 8X11.5

LOC	PART CODE	PART NAME	PART DESCRIPTION
C620	CEXF1A471V	C ELECTRO	10V RSS 470MF 8X11.5
C625	CEXF1E220A	C ELECTRO	25V RSM 22MF 6.3X7
C626	CEXF1E220A	C ELECTRO	25V RSM 22MF 6.3X7
C627	CEXF1E220A	C ELECTRO	25V RSM 22MF 6.3X7
C628	CEXF1E220A	C ELECTRO	25V RSM 22MF 6.3X7
C629	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C631	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C632	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP
C638	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C639	CEXF1C331V	C ELECTRO	16V RSS 330MF (8X11.5) TP
C815	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP
C816	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C817	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C818	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C819	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C823	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C825	CEXF1H100A	C ELECTRO	50V RSM 10MF (5X7) TP
C826	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C827	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
F801A	97P460170P	CLIP FUSE	PFC5000-0702
F801B	97P460170P	CLIP FUSE	PFC5000-0702
IC504	1K1A7033P-	IC	KIA7033P
L001	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L002	5CPX569G-T	COIL PEAKING	EL0405RA 5R6G RADIAL (TP)
*L051	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L171	5CPX100J--	COIL PEAKING	PL 10UH J (TAPPING)
L172	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L201	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L251	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L301	5CPX560J--	COIL PEAKING	56UH J (RADIAL)
L302	5CPX121J--	COIL PEAKING	120UH J (RADIAL)
L304	5CPX100J--	COIL PEAKING	PL 10UH J (TAPPING)
L305	5CPX100J--	COIL PEAKING	PL 10UH J (TAPPING)
L306	5CPX100J--	COIL PEAKING	PL 10UH J (TAPPING)
L601	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L602	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L607	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L608	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L811	56C220K686	COIL CHOKE	22UH K 27.5X0.4D
L812	56C220K695	COIL CHOKE(CAP TYPE)	22UH K (CAP TYPE) 9X11.1
L813	56C220K686	COIL CHOKE	22UH K 27.5X0.4D
Q001	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q171	TZSR2001--	TR	KSR2001 (AUTO)
Q172	TZSR2001--	TR	KSR2001 (AUTO)
Q173	TZSR2001--	TR	KSR2001 (AUTO)
Q174	TZSR1004--	TR	KSR1004 (AUTO)
Q175	TZSR1004--	TR	KSR1004 (AUTO)
Q176	TZSR1004--	TR	KSR1004 (AUTO)
Q177	TZTA1273Y-	TR	KTA1273Y(966Y)

LOC	PART CODE	PART NAME	PART DESCRIPTION
Q178	TZSR1001--	TR	KSR1001 (AUTO)
Q179	TZTA1273Y-	TR	KTA1273Y(966Y)
Q180	TZSR1001--	TR	KSR1001 (AUTO)
Q181	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q201	TZTC3202Y-	TR	KTC3202Y (AUTO)(1959Y)
Q202	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q203	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q204	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q205	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q251	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q301	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q302	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q303	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q304	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q305	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q306	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q307	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q501	TZSR1001--	TR	KSR1001 (AUTO)
Q502	TZTA1273Y-	TR	KTA1273Y(966Y)
Q503	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q504	TZTA1273Y-	TR	KTA1273Y(966Y)
Q506	TZSR1001--	TR	KSR1001 (AUTO)
Q601	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q602	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q603	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q604	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q605	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q606	TZTA1266Y-	TR	KTA1266Y- (AUTO)(1015Y)
Q607	TZSR2001--	TR	KSR2001 (AUTO)
Q608	TZSR1001--	TR	KSR1001 (AUTO)
Q609	TZSR1002--	TR	KSR1002 (AUTO)
Q610	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q811	TZTC3205Y-	TR	KTC3205Y (2236Y)
Q812	TZTC3205Y-	TR	KTC3205Y (2236Y)
Q813	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q814	TZTA1273Y-	TR	KTA1273Y(966Y)
Q815	TZTC3205Y-	TR	KTC3205Y (2236Y)
Q816	TZTC3205Y-	TR	KTC3205Y (2236Y)
X001	5XE17R734E	CRYSTAL QUARTZ	HC-49/U 17.734476MHZ 30PP
X501	5XJ16R00UE	CRYSTAL QUARTZ	HC-49/S 16.000000MHZ 30PP
51	97PA490500	PCB MAIN A-AUTO AS	DV-K884DY-AQ
*C052	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL
C180	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C181	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C182	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C202	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL
C304	CBZF1E223Z	C CERA	Y5V 25V 0.022MF Z AXIAL
C305	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C315	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)

LOC	PART CODE	PART NAME	PART DESCRIPTION
C321	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL
C334	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C340	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL
C341	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C342	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C346	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C349	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C352	CBZF1E223Z	C CERA	Y5V 25V 0.022MF Z AXIAL
C353	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C354	CCZF1H104Z	C CERA	HIKF 50V 0.1MF Z AXIAL
C505	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C516	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)
C523	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)
C527	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C535	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C536	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C537	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C538	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C545	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C633	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
D171	DZN4148---	DIODE	1N4148 AUTO 52MM
D251	DZN4148---	DIODE	1N4148 AUTO 52MM
D301	DZN4148---	DIODE	1N4148 AUTO 52MM
D302	DZN4148---	DIODE	1N4148 AUTO 52MM
D501	DZN4148---	DIODE	1N4148 AUTO 52MM
D502	DZN4148---	DIODE	1N4148 AUTO 52MM
D504	DZZ6R2BM--	DIODE ZENER	UZ6.2BM (AUTO)
D505	DZN4148---	DIODE	1N4148 AUTO 52MM
D506	DZN4148---	DIODE	1N4148 AUTO 52MM
D507	DZN4148---	DIODE	1N4148 AUTO 52MM
D508	DZZ6R8BM--	DIODE ZENER	UZ-6.8BM AUTO
D509	DZN4003---	DIODE	IN4003
D601	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D602	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D603	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D604	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D605	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D606	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D607	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D608	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D609	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D610	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D611	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D612	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D613	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D614	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D615	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D616	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D617	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)

LOC	PART CODE	PART NAME	PART DESCRIPTION
D618	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D619	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D620	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D621	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D622	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D623	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D624	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D625	DZZ13BL---	DIODE ZENER	UZ-13BL
D626	DZZ13BL---	DIODE ZENER	UZ-13BL
D627	DZZ13BL---	DIODE ZENER	UZ-13BL
D628	DZZ13BL---	DIODE ZENER	UZ-13BL
D629	DZN4148---	DIODE	1N4148 AUTO 52MM
D630	DZN4148---	DIODE	1N4148 AUTO 52MM
D631	DZN4148---	DIODE	1N4148 AUTO 52MM
D811	DZN4003---	DIODE	IN4003
D812	DZN4003---	DIODE	IN4003
D813	DZN4003---	DIODE	IN4003
D814	DZZ10BM---	DIODE ZENER	UZ-10BM
D815	DZUZT33---	DIODE ZENER	UZT33
D816	DZZ5R6BM--	DIODE ZENER	DZ 5.6BM (AUTO)
D817	DZZ7R5BM--	DIODE ZENER	UZ-7.5BM
D818	DZZ10BM---	DIODE ZENER	UZ-10BM
D819	DZN4148---	DIODE	1N4148 AUTO 52MM
D820	DZA7160A--	DIODE ZENER	MA7160-A (52MM TAPPING)
D822	DZN4003---	DIODE	IN4003
D823	DZN4003---	DIODE	IN4003
D824	DZZ3R9B---	DIODE ZENER	DZ 3R9B (3R9) (AUTO)
JP001	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP002	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP003	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP004	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP005	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP006	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP007	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP008	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP009	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP010	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP011	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP012	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP013	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP014	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP015	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP016	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP017	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP018	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP019	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP020	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP021	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP022	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING

LOC	PART CODE	PART NAME	PART DESCRIPTION
JP023	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP024	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP025	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP026	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP027	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP028	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP029	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP030	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP031	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP032	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP033	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP034	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP035	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP036	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP037	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP038	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP039	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP040	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP041	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP042	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP044	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP045	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP046	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP047	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP048	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP049	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP050	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP051	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP052	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP053	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP054	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP055	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP056	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP057	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP058	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP059	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP060	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP061	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP062	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP063	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP065	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP066	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP067	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP068	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP069	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP070	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP071	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP072	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP073	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING

LOC	PART CODE	PART NAME	PART DESCRIPTION
JP074	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP075	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP076	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP077	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP078	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP079	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP080	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP081	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP082	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP083	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP084	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP085	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP086	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP087	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP088	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP089	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP090	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP091	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP092	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP093	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP094	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP095	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP096	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP097	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP098	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP099	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP100	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP101	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP102	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP103	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP105	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP106	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP107	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP108	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP109	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP110	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP111	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP112	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP113	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP114	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP115	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP116	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP117	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP118	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP119	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP120	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP121	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP122	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP123	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING

LOC	PART CODE	PART NAME	PART DESCRIPTION
JP124	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP125	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP126	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP127	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP128	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP129	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP130	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP131	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP132	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP133	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP134	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP135	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP136	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP137	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP138	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP139	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP140	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP141	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP142	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP143	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP144	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP145	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP146	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP147	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP148	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP149	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP150	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP151	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP152	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP153	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP154	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP155	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP156	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP157	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP158	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP159	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP160	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP161	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP162	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP163	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP164	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP165	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP166	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP167	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP168	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP169	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP170	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP171	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP172	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING

LOC	PART CODE	PART NAME	PART DESCRIPTION
JP173	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP174	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP175	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP176	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP177	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP178	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
*JP179	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP180	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP181	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP182	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP183	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP184	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP185	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP186	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP187	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP188	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP189	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP190	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP191	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP192	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP193	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP194	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP195	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP196	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP197	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP198	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP199	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP200	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP201	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP202	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP203	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP204	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP205	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP206	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP207	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP208	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP209	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP210	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP211	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP212	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP213	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP214	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP215	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP216	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP217	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP218	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP219	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP220	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP221	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING

LOC	PART CODE	PART NAME	PART DESCRIPTION
JP222	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP223	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP224	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP225	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP226	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP227	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP229	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP230	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP231	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP232	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP233	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP234	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP235	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP236	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP237	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP238	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP239	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP240	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP241	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP242	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP243	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP244	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP245	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP246	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP247	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP248	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP249	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP250	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP251	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP252	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP253	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP254	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP255	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP256	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP257	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP258	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP259	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP260	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP261	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP263	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP264	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP265	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP267	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP268	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP269	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP270	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP271	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP272	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP273	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING

LOC	PART CODE	PART NAME	PART DESCRIPTION
JP274	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP275	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP276	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP277	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP278	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP279	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP280	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP281	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP282	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP290	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP291	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP292	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP293	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP294	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
L003	5CPZ220K02	COIL PEAKING	22UH K (AXIAL 3.5MM)
L202	5CPZ229K02	COIL PEAKING	LAL02TB 2.2UH M AXIAL
L603	5CPZ229K02	COIL PEAKING	LAL02TB 2.2UH M AXIAL
L604	5CPZ229K02	COIL PEAKING	LAL02TB 2.2UH M AXIAL
L605	5CPZ229K02	COIL PEAKING	LAL02TB 2.2UH M AXIAL
L606	5CPZ229K02	COIL PEAKING	LAL02TB 2.2UH M AXIAL
L610	5PB13857R-	COIL BEAD	BI3857R(RADIAL)
L611	5PB13857--	COIL BEAD	BI3857(AXIAL)
R006	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J
R007	RD-4Z471J-	R CARBON FILM	1/4 470 OHM J
*R051	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J
*R055	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J
R171	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R173	RD-AZ519J-	R CARBON FILM	1/6 5.1 OHM J
R176	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R177	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R181	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J
R183	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R189	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J
R198	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R199	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R202	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J
R204	RD-AZ822J-	R CARBON FILM	1/6 8.2K OHM J
R206	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J
R207	RD-AZ432J-	R CARBON FILM	1/6 4.3K OHM J
R209	RD-AZ113J-	R CARBON FILM	1/6 11K OHM J
R214	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J
R218	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R219	RD-AZ182G-	R CARBON FILM	1/6 1.8K OHM G
R220	RD-AZ303J-	R CARBON FILM	1/6 30K OHM J
R223	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J
R255	RD-AZ225J-	R CARBON FILM	1/6 2.2M OHM J
R264	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R265	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R266	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J

LOC	PART CODE	PART NAME	PART DESCRIPTION
R267	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R268	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R269	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R272	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R273	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R276	RD-AZ513J-	R CARBON FILM	1/6 51K OHM J
R277	RD-AZ513J-	R CARBON FILM	1/6 51K OHM J
R304	RD-AZ820J-	R CARBON FILM	1/6 82 OHM J
R307	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J
R313	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J
R314	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J
R316	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J
R317	RD-AZ513J-	R CARBON FILM	1/6 51K OHM J
R318	RD-AZ513J-	R CARBON FILM	1/6 51K OHM J
R319	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J
R320	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R322	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R323	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J
R328	RD-AZ183J-	R CARBON FILM	1/6 18K OHM J
R329	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J
R330	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R331	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R332	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J
R333	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R334	RD-AZ155J-	R CARBON FILM	1/6 1.5M OHM J
R503	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R507	RD-AZ304J-	R CARBON FILM	1/6 300K OHM J
R508	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R509	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R513	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J
R514	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R520	RD-AZ201J-	R CARBON FILM	1/6 200 OHM J
R522	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J
R523	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R524	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R525	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R530	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J
R536	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R537	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R538	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R539	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R540	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R542	RD-AZ511J-	R CARBON FILM	1/6 510 OHM J
R543	RD-4Z106J-	R CARBON FILM	1/4 10M OHM J
R553	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R554	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R555	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J
R556	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J
R557	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J

LOC	PART CODE	PART NAME	PART DESCRIPTION
R558	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R559	RD-AZ362J-	R CARBON FILM	1/6 3.6K OHM J
R560	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J
R561	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J
R562	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J
R571	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J
R576	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R577	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R579	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R582	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R583	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R584	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R585	RD-AZ242J-	R CARBON FILM	1/6 2.4K OHM J
R586	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R587	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J
R589	RD-AZ753J-	R CARBON FILM	1/6 75K OHM J
R590	RD-AZ753J-	R CARBON FILM	1/6 75K OHM J
R603	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R604	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R605	RD-4Z471J-	R CARBON FILM	1/4 470 OHM J
R606	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J
R607	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R608	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R609	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R610	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R612	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J
R614	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R615	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R616	RD-4Z471J-	R CARBON FILM	1/4 470 OHM J
R619	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R620	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R621	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R622	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R647	RD-4Z101J-	R CARBON FILM	1/4 100 OHM J
R801	RC-2Z565K0	R CARBON COMP	1/2 5.6M OHM K
R802	RC-2Z565K0	R CARBON COMP	1/2 5.6M OHM K
R812	RD-AZ300J-	R CARBON FILM	1/6 30 OHM J
R813	RD-4Z622J-	R CARBON FILM	1/4 6.2K OHM J
R815	RD-4Z511J-	R CARBON FILM	1/4 510 OHM J
R817	RD-2Z391J-	R CARBON FILM	1/2 390 OHM J
R818	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J
R819	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J
R820	RD-4Z511J-	R CARBON FILM	1/4 510 OHM J
U301	97P65166MA	PCB MAIN	330X247X1.6T(K884DY-AQ)

Table of Difference Part List Main As

1. FOR EMC & MICOM

LOC	PART-CODE	FOR OTHERS	FOR U.K. & S/IRELAND
B001B	97P7608300	DELETE	ADD
IC501	---	S/N : 168KK8X8TS	S/N : 168KK8YKTS

2. FOR A/V JACK & C807

LOC	PART-CODE	FOR OTHERS	FOR AUSTRALIA & M.EAST
JK601	97P6313300	ADD	DELETE
JK603	97P0718400	DELETE	ADD
M601	---	S/N : 97P0717000	S/N : 97P0718400
C807	---	S/N : CEXF2G470V	S/N : CEXN2G820P

3. PDC/VPS

LOC	PART-CODE	PDC/VPS ON	PDC/VPS OFF
IC051	12HV5649--	ADD	DELETE
C053	HCBK103KCA	ADD	DELETE
C054	HCBK222KCA	ADD	DELETE
C055	HCFK333ZCA	ADD	DELETE
RJ015	HRF8000-EA	ADD	DELETE
R052	HRFT105JCA	ADD	DELETE
R053	HRFT104JCA	ADD	DELETE
R054	HRFT125JCA	ADD	DELETE
R056	HRFT125JCA	ADD	DELETE
R057	HRFT682JCA	ADD	DELETE
C051	CEXF1C470A	ADD	DELETE
L051	5CPX101J--	ADD	DELETE
C052	CCZF1H104Z	ADD	DELETE
JP179	85801065GY	ADD	DELETE
R051	RD-AZ332J-	ADD	DELETE
R055	RD-AX682J-	ADD	DELETE

4. POWER CORD AS

LOC	PART-CODE	For U.K & S/Ireland	For Australia	For Others
F01	-	S/N : 97PA4B2210	S/N : 97PA484200	S/N : 97P6900910

PCB Logic AS

LOC	PART CODE	PART NAME	PART DESCRIPTION
24	97PD184200	PCB LOGIC SW AS	DV-K884DY-AQ
G701	DSVV6SS25-	DIGITRON (V.F.D)	SVV-6SS25
H701	1GP3U771R-	IC UNIT R/RECEIVER	GP3U771R
JK701	97P6311300	JACK PIN	DSP-9407A
JK71A	97P0973700	PLATE EARTH AV	SUS304 CSP T0.15
M701	97P2340500	HOLDER DIGITRON	PP
P701	97P62G04CM	CONN HOUSING1	GB150 RECEP 1.5MM 21P
P701A	97P62G03CM	CONN WAFER	GB150 PLUG 1.5MM 21P
P702	97P62G04CB	CONN HOUSING1	GB150 RECEP 1.5MM 11P
P702A	97P62G03CB	CONN WAFER	GB150 PLUG 1.5MM 11P
P703	97P6271300	CONN WAFER (ANGLE)	00-8283-0511-00000
32	97PB227800	PCB LOGIC SW R-AUTO	DV-K884DY-AQ
C701	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C703	CXSL1H470J	C CERA	50V SL 47PF J
C704	CXSL1H470J	C CERA	50V SL 47PF J
C751	CXSL1H101J	C CERA	50V SL 100PF J
C752	CXSL1H101J	C CERA	50V SL 100PF J
SW701	5S50101Z90	SW TACT	SKHV10910A
SW702	5S50101Z90	SW TACT	SKHV10910A
SW703	5S50101Z90	SW TACT	SKHV10910A
SW704	5S50101Z90	SW TACT	SKHV10910A
SW705	5S50101Z90	SW TACT	SKHV10910A
SW706	5S50101Z90	SW TACT	SKHV10910A
SW707	5S50101Z90	SW TACT	SKHV10910A
SW708	5S50101Z90	SW TACT	SKHV10910A
42	97PC304000	PCB LOGIC SW A-AUTO	DV-K884DY-AQ
C702	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C703	CXSL1H470J	C CERA	50V SL 47PF J
C704	CXSL1H470J	C CERA	50V SL 47PF J
D703	DZN4148---	DIODE	1N4148 AUTO 52MM
D704	DZN4148---	DIODE	1N4148 AUTO 52MM
D707	DZN4148---	DIODE	1N4148 AUTO 52MM
D708	DZN4148---	DIODE	1N4148 AUTO 52MM
D711	DZN4148---	DIODE	1N4148 AUTO 52MM
D712	DZN4148---	DIODE	1N4148 AUTO 52MM
D713	DZN4148---	DIODE	1N4148 AUTO 52MM
D714	DZN4148---	DIODE	1N4148 AUTO 52MM
JP701	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP702	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP703	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP704	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP707	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP710	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP711	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP712	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP713	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP714	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP715	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP716	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING

LOC	PART CODE	PART NAME	PART DESCRIPTION
JP717	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP718	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP720	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP721	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP722	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP723	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP724	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP725	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP726	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP727	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP728	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP729	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP730	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP731	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP732	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
R701	RD-4Z200J-	R CARBON FILM	1/4 20 OHM J
R702	RD-AZ510J-	R CARBON FILM	1/6 51 OHM J
R703	RD-AZ510J-	R CARBON FILM	1/6 51 OHM J
R751	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R752	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R753	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J
U701	97P65172LA	PCB LOGIC	330X164X1.6T/2 (K884DY-AQ)

PCB IF Module as(A2)

LOC	PART CODE	PART NAME	PART DESCRIPTION
25	97PD184200	PCB IF MODULE AS(A2)	DV-K884DY-AQ
IC121	1TDA9845--	IC RF	TDA9845
L101	56B215K694	COIL PIF	KTRF-7780B
P101	97P62M05A9	CONN B/B	35238 RECEP 2.5MM 9P
P102	97P62M05A9	CONN B/B	35238 RECEP 2.5MM 9P
X121	5XE10R000C	CRYSTAL QUARTZ	HC-49/U 10.00000MHZ 20PPM
Z101	5PK3953M--	FILTER SAW	K3953M
Z102	5PK9453M--	FILTER SAW	K9453M
Z104	5PTPS55MB-	FILTER CERA	TPS-5.5MB
Z105	5PCB5R500A	FILTER CERA	SFSH5.5MCB 5.5MHZ
*Z107	5PCB6R500A	FILTER CERA	SFSH6.5MCB 6.5MHZ
Z121	5PSFE574MC	FILTER CERA	SFE 5.74MC
33	97PB227900	PCB IF CHIP AS	DV-K884DY-AQ
C101	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C102	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C103	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C104	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C105	HCLK471JCA	C CHIP CERA	50V SL 470PF J 2012
C106	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C107	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C109	HCLK391JCA	C CHIP CERA	50V SL 390PF J 2012
C112	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C117	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C118	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C122	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C125	HCLK181JCA	C CHIP CERA	50V SL 180PF J 2012
C157	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C158	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
IC101	1TDA9814T-	IC IF	TDA9814T
L108	HLM100K01B	L CHIP MULTI	10UH MLF3216C100KT
R108	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R113	HRFT223JCA	R CHIP	1/10 22K OHM J 2012
R114	HRFT223JCA	R CHIP	1/10 22K OHM J 2012
R115	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R116	HRFT201JCA	R CHIP	1/10 200 OHM J 2012
R117	HRFT471JCA	R CHIP	1/10 470 OHM J 2012
R123	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R124	HRFT471JCA	R CHIP	1/10 470 OHM J 2012
R127	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012
R131	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012
R132	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012
R133	HRFT105JCA	R CHIP	1/10 1M OHM J 2012
R134	HRFT105JCA	R CHIP	1/10 1M OHM J 2012
43	97PC304100	PCB IF R-AUTO AS	DV-K884DY-AQ
C108	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C110	CEXF1E220V	C ELECTRO	25V RSS 22MF 5X11
C113	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP
C114	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C115	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP

LOC	PART CODE	PART NAME	PART DESCRIPTION
C116	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP
C121	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP
C123	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)
C124	CMXM2A182J	C MYLAR	100V 1800PF J (TP)
C126	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C127	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C128	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C129	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C130	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP
C131	CMXM2A103J	C MYLAR	100V 0.01MF J (TP)
C132	CMXM2A103J	C MYLAR	100V 0.01MF J (TP)
C133	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP
C134	CEXF1E220V	C ELECTRO	25V RSS 22MF 5X11
C135	CMXM2A103J	C MYLAR	100V 0.01MF J (TP)
C136	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP
L103	5CPX100J--	COIL PEAKING	PL 10UH J (TAPPING)
L105	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L106	5CPX150J--	COIL PEAKING	15UH J (RADIAL)
L107	5CPX100J--	COIL PEAKING	PL 10UH J (TAPPING)
L110	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L121	5CPX472J--	COIL PEAKING	4700UH 5MM J RADIAL
Q102	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
Q121	TZSR1004--	TR	KSR1004 (AUTO)
R191	RV5426203M	R SEMI FIXED	H20K-5X3-6Y-PC-MS
52	97PA490700	PCB IF A-AUTO AS	DV-K884DY-AQ
JP001	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP002	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP003	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP004	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP005	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP006	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP007	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP008	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP009	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP010	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP011	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
R101	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R108	RD-AZ181J-	R CARBON FILM	1/6 180 OHM J
R109	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J
R110	RD-AZ201J-	R CARBON FILM	1/6 200 OHM J
R111	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J
R112	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J
R118	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R119	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J
R121	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J
R122	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J
R125	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J
R126	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R130	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J
U101	97P651671A	PCB IF MODULE	247X246X1.6T/6(K884DY-AQ)

table of difference part list if module(a2) pcb

1. FOR PAL-BG/DK SYSTEM

LOC	PART-CODE	FOR PAL-B/G	FOR PAL-BG/DK
Z107	5PCB6R500A	DELETE	ADD

PCB IF Module as (Nicam)

LOC	PART CODE	PART NAME	PART DESCRIPTION
22	97PD186100	PCB IF AS (NICAM)	DV-K884DY-AQ/I
IC102	1SAA7283ZP	IC RF	SAA7283ZP (NICAM)
L101	56B215K694	COIL PIF	KTRF-7780B
P101	97P62M05A9	CONN B/B	35238 RECEP 2.5MM 9P
P102	97P62M05A9	CONN B/B	35238 RECEP 2.5MM 9P
X102	5XE08R192C	CRYSTAL QUARTZ	HC-49/U 8.192MHZ 20PPM
Z101	5PK3953M--	FILTER SAW	K3953M
Z102	5PK9453M--	FILTER SAW	K9453M
*Z104	5PTPS55MB-	FILTER CERA	TPS-5.5MB
*Z105	5PCB5R500A	FILTER CERA	SFSH5.5MCB 5.5MHZ
01C	97PB229000	PCB IF CHIP AS(NICAM)	DV-K884DY-AQ/I
C101	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C102	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C103	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C105	HCQK471JCA	C CHIP CERA	50V CH 470PF J 2012
C106	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C107	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C109	HCLK391JCA	C CHIP CERA	50V SL 390PF J 2012
C111	HCBK223KCA	C CHIP CERA	50V X7R 0.022MF K 2012
C112	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C117	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C118	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C119	HCBK223KCA	C CHIP CERA	50V X7R 0.022MF K 2012
C120	HCBK223KCA	C CHIP CERA	50V X7R 0.022MF K 2012
C121	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C122	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C124	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C127	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C129	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C130	HCBK473KCA	C CHIP CERA	50V X7R 0.047MF K 2012
C132	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C134	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C136	HCLK100DCA	C CHIP CERA	50V SL 10PF D 2012
C138	HCLK221JCA	C CHIP CERA	50V SL 220PF J 2012
C140	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C142	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C144	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C145	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C146	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C147	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012

LOC	PART CODE	PART NAME	PART DESCRIPTION
C148	HCBK223KCA	C CHIP CERA	50V X7R 0.022MF K 2012
C149	HCLK100DCA	C CHIP CERA	50V SL 10PF D 2012
C150	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012
C151	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012
C152	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C153	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C154	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C155	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C156	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C158	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
IC101	1TDA9814T-	IC IF	TDA9814T
L108	HLM100K01B	L CHIP MULTI	10UH MLF3216 C100KT
RJ002	HRF8000-EA	R CHIP	1/8 0 OHM 3216
R103	HRFT101JCA	R CHIP	1/10 100 OHM J 2012
R104	HRFT562JCA	R CHIP	1/10 5.6K OHM J 2012
R105	HRFT102JCA	R CHIP	1/10 1K OHM J 2012
R106	HRFT471JCA	R CHIP	1/10 470 OHM J 2012
R107	HRFT270JCA	R CHIP	1/10 27 OHM J 2012
R110	HRFT201JCA	R CHIP	1/10 200 OHM J 2012
R116	HRFT271JCA	R CHIP	1/10 270 OHM J 2012
R118	HRFT182JCA	R CHIP	1/10 1.8K OHM J 2012
R119	HRFT104JCA	R CHIP	1/10 100K OHM J 2012
R120	HRFT104JCA	R CHIP	1/10 100K OHM J 2012
R124	HRFT333JCA	R CHIP	1/10 33K OHM J 2012
R126	HRFT105JCA	R CHIP	1/10 1M OHM J 2012
R128	HRFT684JCA	R CHIP	1/10 680K OHM J 2012
R129	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R130	HRFT223JCA	R CHIP	1/10 22K OHM J 2012
R131	HRFT223JCA	R CHIP	1/10 22K OHM J 2012
R132	HRFT223JCA	R CHIP	1/10 22K OHM J 2012
01R	97PC305100	PCB IF R-AUTO(NICAM)	DV-K884DY-AQ/I
C108	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C110	CEXF1E220A	C ELECTRO	25V RSM 22MF 6.3X7
C113	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C114	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C115	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C116	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C123	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C125	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C126	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C128	CEXF1H229A	C ELECTRO	50V RSM 2.2MF (4X7) TP
C131	CEXF1C100A	C ELECTRO	16V RSM 10MF 5X7
C133	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
L102	5CPX689K--	COIL PEAKING	6.8UH 5MM K RADIAL
L103	5CPX100J--	COIL PEAKING	PL 10UH J (TAPPING)
L105	5CPX689K--	COIL PEAKING	6.8UH 5MM K RADIAL
L106	5CPX150J--	COIL PEAKING	15UH J (RADIAL)
L107	5CPX100J--	COIL PEAKING	PL 10 UH J (TAPPING)
Q101	TZTC3197--	TR	KTC3197 (AUTO)(388A)

LOC	PART CODE	PART NAME	PART DESCRIPTION
Q102	TZTC3198Y-	TR	KTC3198Y-(1815Y) (AUTO)
R191	RV5426203M	R SEMI FIXED	H20K-5X3-6Y-PC-MS
01A	97PA491500	PCB IF A-AUTO(NICAM)	DV-K884DY-AQ/I
D101	DZN4148---	DIODE	1N4148 AUTO 52MM
D102	DZBB405---	DIODE VARACTOR	BB405
JP001	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP002	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP003	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP005	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP006	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP007	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP008	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP009	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP010	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP011	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP012	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP013	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
R101	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J
R102	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J
R108	RD-AZ181J-	R CARBON FILM	1/6 180 OHM J
R109	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J
R111	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J
R112	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J
R115	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J
R117	RD-AZ100J-	R CARBON FILM	1/6 10 OHM J
R121	RD-AZ229J-	R CARBON FILM	1/6 2.2 OHM J
R122	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R123	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J
R125	RD-AZ229J-	R CARBON FILM	1/6 2.2 OHM J
R127	RD-AZ220J-	R CARBON FILM	1/6 22 OHM J
U101	97P651661A	PCB IF MODULE	247X246X1.6T/6

table of difference part list IF module (nicam) pcb

1. PAL-I, PAL-B/G NICAM SYSTEM

LOC	PART-CODE	FOR PAL-B/G NICAM	FOR PAL-I NICAM
Z104	---	S/N : 5PTPS55MB-	S/N : 5PTPS60MB-
Z105	---	S/N : 5PCB5R500A	S/N : 5PCB6R000A

PCB Pre Amp as

LOC	PART CODE	PART NAME	PART DESCRIPTION
26	97PD184300	PCB PRE AMP AS	DV-K884DY-AQ
IC401	1LA70011--	IC PREAMP	LA70011 (4HD)
M401	97PB227500	CASE PRE AMP AS	DV-K884DY-AQ
M401A	97P0470300	COVER SHI PREAMP	ET T0.3
M401B	97P0470200	CASE SHI PREAMP	ET T0.4
P401	97P62G01BF	CONN B/B	GB200 RECEP 2.0MM 15P
P402	97P6289650	CONN WAFER	10P FPC
34	97PB228000	PCB PREAMP CHIP AS	DV-K884DY-AQ
C401	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C402	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C404	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C406	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C408	HCLK471JCA	C CHIP CERA	50V SL 470PF J 2012
C409	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012
C410	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C411	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C412	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C453	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C454	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C455	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C456	HCLK221JCA	C CHIP CERA	50V SL 220PF J 2012
C457	HCLK221JCA	C CHIP CERA	50V SL 220PF J 2012
C458	HCLK221JCA	C CHIP CERA	50V SL 220PF J 2012
C459	HCBK473KCA	C CHIP CERA	50V X7R 0.047MF K 2012
C460	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C462	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C463	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
C465	HCBK103KCA	C CHIP CERA	50V X7R 0.01MF K 2012
IC451	1BA7746FS-	IC AUDIO	BA7746FS(PREAMP)
R405	HRFT242JCA	R CHIP	1/10 2.4K OHM J 2012
R451	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R452	HRFT561JCA	R CHIP	1/10 560 OHM J 2012
R453	HRFT120JCA	R CHIP	1/10 12 OHM J 2012
R454	HRFT224JCA	R CHIP	1/10 220K OHM J 2012
R457	HRFT391JCA	R CHIP	1/10 390 OHM J 2012
R458	HRFT182JCA	R CHIP	1/10 1.8K OHM J 2012
R459	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R460	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
44	97PC304200	PCB PREAMP R-AUTO AS	DV-K884DY-AQ
C403	CEXF1H109A	C ELECTRO	50V RSM 1MF (4X7) TP
C405	CEXF1C470A	C ELECTRO	16V RSM 47MF (5X7) TP
C466	CEXF1A101A	C ELECTRO	10V RSM 100MF 6.3X7
L401	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
L451	5CPX101J--	COIL PEAKING	PL 100UH J (TAPPING)
53	97PA490900	PCB PREAMP A-AUTO AS	DV-K884DY-AQ
C451	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C452	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C461	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)
C464	CBZP1C103M	C CERA SEMI	16V Y5S 0.01MF M (AXIAL)

LOC	PART CODE	PART NAME	PART DESCRIPTION
JP401	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP402	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP403	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP410	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP411	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP412	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP413	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
R402	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J
R404	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J
R406	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J
R410	RD-AZ823J-	R CARBON FILM	1/6 82K OHM J
R455	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J
R456	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J
U401	97P65166HA	PCB PRE AMP	247X246X1.6T/12(K884DY-AQ)

PCB Power Smps As

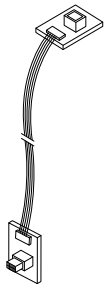
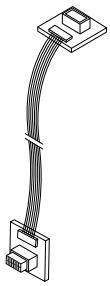
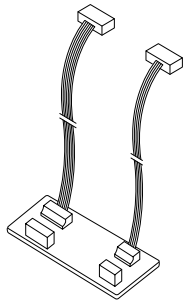
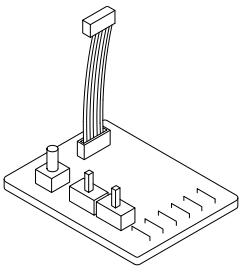
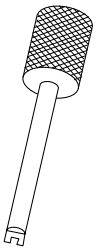
LOC	PART CODE	PART NAME	PART DESCRIPTION
27	97PD184000	PCB POWER SMPS AS	DV-K884DY-AQ
A01	2193102005	SOLDER BAR	SN:PB=63:47 S63S-1320
A02	2193011100	SOLDER WIRE	60 SNA 1.2D
A03	2291050615	FLUX SOLDER	KS-892M-1
A04	2291050312	FLUX SOLVENT	S-3000D
B01	97P0465700	COVER SHI SMPS	ET T=0.5
B02	97P0970501	PLATE SHI SMPS	ET T=0.5
B03	97P4407500	RADIATOR TR	SPCC T=0.8
B04	97P5603700	INSULATION SMPS	PC T0.5
B05	7124300811	SCREW TAPPING	T2S RND 3X8 MFZN
B06	97P0981100	PLATE PVC SMPS	PVC T=0.5
CN11	97P6284000	CONN WAFER	YFAW025-105 ANGLE 3.5X4.5
CN21	97P6284300	CONN WAFER	YFAW025-108 ANGLE 3.5X4.5
C16	CH1TFE222M	C CERA AC	4.0KV 2200PF M AD AC250V
C19	CMXL2G333K	C MYLAR	400V MEU 0.033MF K
C23	CEXF1A102F	C ELECTRO	10V RX 1000MF 10X20
C24	CEXF1C681F	C ELECTRO	16V RX 680MF 10X20
DZ11	DBZT03C160	DIODE ZENER	BZT03C160 RA15/7
D11	DBYV26EL--	DIODE	BYV26EL-5700 1000V 1A
D23	DRK49----F	DIODE SCHOTTKY	RK49 LF-M1
D24	DS3L40----	DIODE	S3L40 400V 3.0A
IC11	1T0P214YA1	IC POWER SW	PWR-TOP214YA1
L11	56X0000005	COIL BEAD	BLI-7.5A
L12	56X0000007	COIL BEAD	BI-4865(5TS) BASE
PC11	1LTV817AB-	IC PHOTO COUPLER	LTV817M CTR 80-160
R13	RS01Y334J-	R M-OXIDE FILM	1W 330K OHM J
T11	57M8282200	TRANS SMPS	TSW-K884
35	97PB227700	PCB POWER CHIP AS	DV-K884DY-AQ
C11	HCBK104KCA	C CHIP CERA	50V X7R 0.1MF K 2012
C18	HCBK104KCA	C CHIP CERA	50V X7R 0.1MF K 2012
C27	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
C29	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012
DC1	DUS1J-----	DIODE CHIP	US1J 600V 1A
DC2	DUS1J-----	DIODE CHIP	US1J 600V 1A
DC3	DUS1D-----	DIODE CHIP	US1D 200V 1A
R11	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R12	HRFT689JCA	R CHIP	1/10 6.8 OHM J 2012
R22	HRFT103JCA	R CHIP	1/10 10K OHM J 2012
R23	HRFT181JCA	R CHIP	1/10 180 OHM J 2012
R24	HRFT102GCA	R CHIP	1/10 1K OHM G 2012
R25	HRFT181GCA	R CHIP	1/10 180 OHM G 2012
R26	HRFT821GCA	R CHIP	1/10 820 OHM G 2012
R27	HRFT201JCA	R CHIP	1/10 200 OHM J 2012
45	97PC303900	PCB POWER R-AUTO AS	DV-K884DY-AQ
C12	CBXB3A470J	C CERA	1KV SL 47PF J HR
C13	CEXF1C470D	C ELECTRO	16V RZ 47MF 5X11
C17	CCXB3A102K	C CERA	1KV B 1000PF K (TAPPING)
C21	CEXF0J331F	C ELECTRO	6.3V RX 330MF 8X11.5
C22	CEXF1J220D	C ELECTRO	63V RZ 22MF 6.3X11.5 TP

LOC	PART CODE	PART NAME	PART DESCRIPTION
C25	CEXF1J220D	C ELECTRO	63V RZ 22MF 6.3X11.5 TP
C26	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP
IC21	1KA431AZ--	IC REGULATOR	KA431AZ
54	97PA490600	PCB POWER A-AUTO AS	DV-K884DY-AQ
DZ12	DZZ6R8BM--	DIODE ZENER	UZ-6.8BM AUTO
D12	DZEU01Z---	DIODE	EU01Z
JP01	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP02	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP04	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
JP05	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
L22	5PB13857--	COIL BEAD	BI3857(AXIAL)
R21	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING
U001	97P65166PA	PCB POWER	197X197X1.6T/6(K884DY-AQ)

SECTION 13. SERVICE JIG CONNECTION METHODS

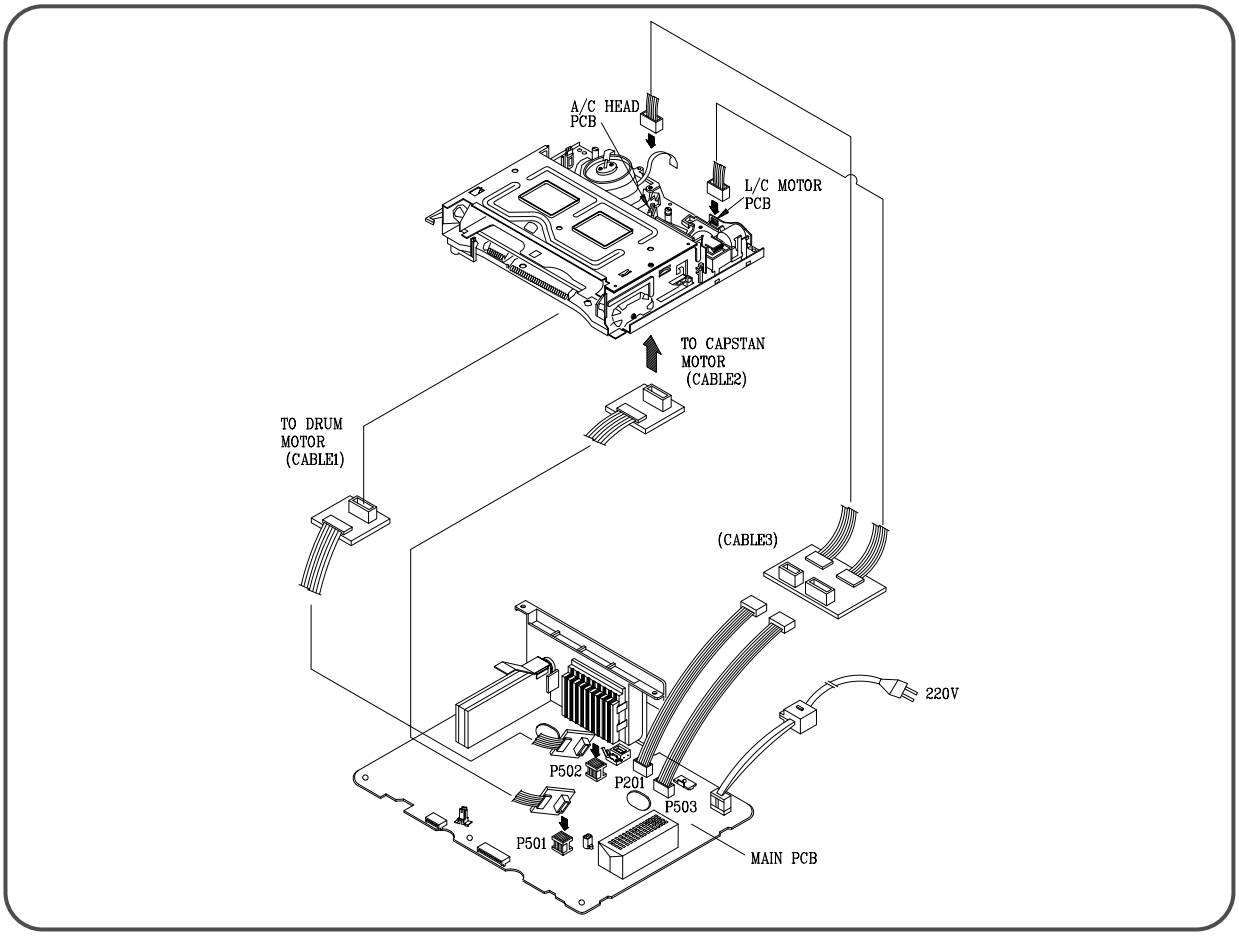
The Service Fixture

FIXTURE ITEM	DESCRIPTION	P/N
Extension Cable 1	Use for K mecha Drum Motor Connection Cable	97PB400100
Extension Cable 2	Use for K mecha Capstan Motor Connection Cable	97PB400200
Extension Cable 3	Use for K mecha A/C head and L/C Motor Connecting Cable	97PB400300
Path Adj Fixture	Use for X-position adjust Tape path alignment	97PB396000
Special Driver	Use for X-position adjust Tape path alignment	

Cable 1	Cable 2	Cable 3	Path Adj Fixture	Special Driver
				

NOTE : If cable 1, cable 2 and cable 3 are not available, you can do a repair by selecting No2. EE MODE WITHOUT DECK MODE and No 3. ERROR CHECK MODE in SVC MODE FOR REPAIR as the same effect without those (See page 61).

Extension Cable Connection



NOTE : How to executing the unit in the service mode

1) Press the [MENU] button to go to [MAIN MENU] screen and press the number 484 in sequence then go to [SERVICE MODE] screen.
2) Press the number 1 button to call the [SVC MODE FOR REPAIR] screen.
3) Press the number 1 button to call the [DECK JIG CONNECTION MODE(ON)].

Path Fixture Connection/Test Point Identification

Refer to the adjustment of the tape transporting system